

THE REPORT
OF THE
PRESIDENT
OF
QUEEN'S COLLEGE, BELFAST,
FOR THE
YEAR ENDING MARCH 31, 1867.

Presented to both Houses of Parliament by Command of Her Majesty.



DUBLIN:
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FOR HER MAJESTY'S STATIONERY OFFICE.
1867.

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THE REPORT

OF THE

PRESIDENT OF QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR ENDING MARCH 31, 1867.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

I have the honour to present to your Majesty the following Report of this College for the year ending the 31st of March, 1866. At the opening of the Session (1866-67), the usual examinations for Matriculation and Scholarships were held, and the various Exhibitions and Honors awarded after due deliberation and anxious investigation on the part of the Professors. During the Session 387 students were in attendance in the different departments of the College, precisely the same number that appeared on the rolls in the Session 1863-64, the number, however, of matriculated students in the present year being considerably greater. In the two intervening years the attendance had been unusually large. Taking into consideration the diminution still going on in the population of this country, the incessant demand in this locality for the services of young men in the various departments of business and of trade, the establishment of new seats of learning in various places, the increase in the number of 154 students on the rolls in the year 1854 up to 387 in the present year, must be regarded as a gratifying and encouraging result, especially as, of the students now in attendance, 357 have matriculated, almost all of whom are preparing for graduation.

According to my usual custom I present four subjoined tabular Returns, bringing them up to the present date. They have been most carefully prepared by the Registrar and authenticated by him,

I.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS attending Lectures in QUEEN'S COLLEGE, BELFAST, in each Session from its opening.

SESSIONS.	Matri- culated	Non- Matri- culated.	Total.	Estab- lished Church.	Roman Catho- lic.	Presby- terian.	Metho- dist.	Inde- pend- ent.	Va- rious.	Total.
1849-50, . . .	90	105	195	33	5	145	4	1	7	195
1850-51, . . .	110	75	185	33	10	136	4	1	1	185
1851-52, . . .	120	69	189	40	14	129	5	—	1	189
1852-53, . . .	101	53	154	33	15	100	4	—	2	154
1853-54, . . .	114	54	168	36	14	107	6	—	5	168
1854-55, . . .	118	65	183	34	14	131	3	—	1	183
1855-56, . . .	119	74	193	33	19	131	5	2	3	193
1856-57, . . .	136	58	194	35	14	131	3	2	9	194
1857-58, . . .	153	54	207	31	14	154	4	1	3	207
1858-59, . . .	160	63	223	45	14	153	8	2	1	223
1859-60, . . .	199	58	257	43	16	184	8	2	4	257
1860-61, . . .	239	73	312	57	22	216	7	—	10	312
1861-62, . . .	299	76	375	59	17	256	13	4	16	375
1862-63, . . .	335	53	388	61	24	275	11	3	14	388
1863-64, . . .	340	47	387	63	26	261	10	3	24	387
1864-65, . . .	356	49	405	58	22	285	9	1	30	405
1865-66, . . .	360	53	413	60	19	281	13	2	38	413
1866-67, . . .	357	30	387	57	19	225	18	1	67	387

II.—NUMBERS and RELIGIOUS PERSUASIONS of STUDENTS who have entered QUEEN'S COLLEGE, BELFAST, in each year since its opening.

SESSIONS.	Matri- culated.	Non- Matri- culated.	Total.	Estab- lished Church.	Roman Catho- lic.	Presby- terian.	Metho- dist.	Inde- pend- ent.	Va- rious.	Total.
1849-50, . . .	90	105	195	33	5	145	4	1	7	195
1850-51, . . .	51	42	93	15	7	68	1	—	2	93
1851-52, . . .	42	40	82	25	7	47	2	—	1	82
1852-53, . . .	31	23	54	16	7	28	2	—	1	54
1853-54, . . .	39	23	62	14	5	36	3	—	4	62
1854-55, . . .	41	38	79	13	6	56	2	—	2	79
1855-56, . . .	33	29	62	17	5	36	2	2	—	62
1856-57, . . .	40	28	68	18	4	40	1	—	5	68
1857-58, . . .	43	28	71	8	6	55	2	—	—	71
1858-59, . . .	51	37	88	24	8	51	4	1	—	88
1859-60, . . .	66	24	90	14	6	64	4	—	2	90
1860-61, . . .	96	41	137	29	13	85	3	—	7	137
1861-62, . . .	114	38	152	27	5	101	6	3	10	152
1862-63, . . .	115	22	137	23	12	92	5	—	5	137
1863-64, . . .	109	18	127	25	5	86	3	1	7	127
1864-65, . . .	108	27	135	22	6	97	3	—	7	135
1865-66, . . .	88	30	118	17	7	83	5	—	6	118
1866-67, . . .	95	11	106	16	5	61	10	—	14	106
	1,252	*604	1,856	855	120	1,231	62	8	80	1,856

* Of the 604 who entered as non-matriculated Students, 110 afterwards passed a matriculation examination. The College Register contains 1,362 matriculated and 494 non-matriculated, in all 1,856 students.

III.—RETURN showing the NUMBER of STUDENTS attending the Lectures of each PROFESSOR in each year since the opening of the College.

PROFESSOR OF	1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.
Greek, ...	71	74	46	23	32	38	43	36	44	58	77	100	140	157	120	133	118	74
Latin, ...	63	72	44	25	32	35	40	29	44	54	72	94	139	149	113	118	112	96
Mathematics, ...	86	70	51	36	42	44	45	52	55	62	78	95	106	122	111	113	98	80
English, ...	52	46	53	35	44	44	51	43	56	65	73	100	116	135	125	128	113	102
Modern Languages, ...	62	56	41	31	34	52	43	52	56	63	78	150	177	150	125	146	151	150
Celtic, ...	The Lectures open to the public.															Vacant.		
Natural Philosophy, ...	48	43	61	29	40	35	35	37	43	34	46	95	95	104	106	102	116	113
Natural History, ...	12	49	75	52	53	68	58	69	62	87	84	77	77	83	112	121	101	97
Mineralogy, ...	—	6	14	13	15	13	9	20	13	11	16							
Logic and Metaphysics, ...	3	—	45	39	44	45	43	51	46	54	44	79	106	114	103	91	116	101
Chemistry, ...	40	56	75	53	62	70	60	76	68	88	99	82	106	101	104	122	104	—
Engineering, ...	10	13	15	9	12	12	8	17	16	11	16	14	16	25	30	31	29	27
Agriculture and Medical Jurisprudence, ...	13	21	24	14	22	17	16	20	25	22	27	21	24	22	{ — — —			—
Anatomy, ...															25	30	30	35
Medicine, ...	35	44	55	61	53	63	65	46	52	68	81	101	107	103	114	132	138	155
Surgery, ...	9	17	17	12	15	18	33	27	19	22	29	25	42	27	36	44	48	67
Midwifery, ...	24	15	26	29	28	30	48	32	30	29	39	51	53	54	47	50	55	77
Materia Medica, ...	14	10	12	16	17	18	24	13	7	17	14	26	36	22	34	19	23	36
English Law, ...	11	14	16	17	17	23	25	11	18	22	27	33	38	37	29	38	47	47
Jurisprudence, ...	17	16	17	15	11	15	10	14	12	13	11	16	14	12	12	14	19	13
	11	11	23	10	19	11	15	12	27	20	23	19	20	29	27	31	34	26

This return is given more fully in detail in the Appendix, pp. 4, 5.

The return of Lectures delivered in each Session appears in pp. 10, 11 of the Appendix.

IV.—RETURN of the Number of Medical Students in attendance in each Session.

Session.	Matriculated.	Non-Matriculated.	Total.	Session.	Matriculated.	Non-Matriculated.	Total.
1849-50,	28	27	55	1858-59,	45	34	79
1850-51,	20	35	55	1859-60,	56	39	95
1851-52,	25	39	64	1860-61,	70	46	116
1852-53,	29	33	62	1861-62,	81	48	129
1853-54,	29	37	66	1862-63,	89	33	122
1854-55,	39	36	75	1863-64,	110	33	143
1855-56,	33	48	81	1864-65,	126	25	151
1856-57,	36	25	61	1865-66,	130	29	159
1857-58,	35	32	67	1866-67,	157	17	174

The Return of medical students who attended last Session affords most satisfactory evidence of the progress of this department of the College. It will be observed that in the Session of 1849-50, the total number of medical students on the roll was 55, 28 of them having been matriculated, and 27 non-matriculated, whilst in the last Session 174 were in attendance, of whom 157 had passed the matriculation examination. Yearly there has been a steady and encouraging increase; and owing to the admirable accommodation now furnished on the College grounds for the medical and anatomical departments, through the grants of your Majesty's Treasury and of Parliament, I have no doubt that students preparing for the medical profession will continue in large numbers to avail themselves of the existing advantages.

I cannot here overlook the great utility and importance of the General Hospital of Belfast to the medical faculty and students of the College. The cases of disease and accident that are constantly presenting themselves in that large and admirably con-

ducted establishment, the distinguished ability, zeal, and unremitting efforts of the medical gentlemen charged with the care of the patients, together with their desire to promote the best interests of the students of the Queen's College who have access to the patients and the theatre of operations,—afford means of instruction and of practice which can only exist in a great manufacturing and seaport town, and in an hospital furnished with a large staff of able surgeons and physicians.

The new anatomical rooms of the College have been used with great advantage during the past Session. There still remain some matters to be supplied, and some to be finished; but as I have urgently drawn the attention of the Commissioners of Public Works to these necessary things, I am certain my applications will meet with prompt attention.

It affords me great pleasure to report that the new Library, which promises to be a most suitable and commodious building is progressing towards completion, so that it is likely to be ready for occupation in the course of the next spring. This new addition to the College, together with the suite of medical rooms referred to, will constitute the increased accommodation of which both professors and students felt the want for some years past; and I cannot but express my thankfulness to your Majesty's Government for having sanctioned and recommended the several grants necessary to erect and furnish these important additions.

It is peculiarly gratifying at the present time, to note a considerable increase in the number of degrees conferred during the past year by the Senate of the Queen's University on students of the three Queen's Colleges. Proportionably to their large numbers, the students of Belfast College obtained their share of these degrees, and of the various distinctions connected with them, and won by competition. Most valuable this rivalry continues to be, carried on as it is amongst the students of Belfast, Cork, and Galway, the examinations being always conducted by a corps of distinguished examiners, whose duties are admirably and most impartially discharged.

DEGREES, DIPLOMAS, CERTIFICATES, &c., conferred by the Queen's University
in 1866.

Degree of M.D.,	.	.	.	.	.	40
„ of M.Ch.,	.	.	.	.	.	20
„ of M.A.,	.	.	.	.	.	20
„ of M.A., ad eundem,	.	.	.	.	.	1
„ of LL.B., ad eundem,	.	.	.	.	.	1
„ of B.A.,	.	.	.	.	.	53
Diploma of C.E.,	.	.	.	.	.	12
„ of E.L.,	.	.	.	.	.	1

In all, including the 2 ad eundem Degrees, 148

Also,

52	Candidates passed first University Examination in Arts.
71	„ „ first University Examination in Medicine.
13	„ „ first University Examination in Engineering.

136

Also,

12 Candidates obtained middle-class certificates.

Total, ... 296

The attention and conduct of the great body of the students have been satisfactory. Only two cases of violation of discipline were brought under the notice of the Council, but, being of a serious nature, they required the infliction of the severe punishment of rustication for the Session.

Your Majesty has been graciously pleased to appoint during the Session, two Deans of Residences to take spiritual charge of the students of their respective Churches who may attend this College, viz.,—the Reverend Dr. Porter, Presbyterian, to succeed the Reverend Dr. Cooke, who from infirmity resigned the office, and the Reverend Edward Newenham Hoare, Episcopalian, as successor to the Reverend Henry Murphy. I have received a very satisfactory report from the Reverend Joseph William M'Kay, Wesleyan Dean, regarding the students under his care.

The Deans having suggested to me certain arrangements which in their opinion would afford them greater facilities for the discharge of their duties, I trust to be able to have effect given to their desires.

The Students of this College continue to reap high rewards, and to do honour to themselves and the eminent Professors who instruct them, by carrying appointments through competition in the various departments of the Civil, Public and Foreign, the Army and Navy Medical Services; whilst large numbers of them distinguish themselves greatly in the different professions which they have selected for themselves.

If an illustration were required of the practicability and advantage of united education, this College incontestably furnishes it; its authorities, its professors, its officers, its students belong to different Churches and creeds; and now, after eighteen years of experience as President, I have never known anything but the best results—those of cordiality and friendship—to accrue for the common good and advantage, from this combination of varied opinion and sentiment, whilst every member of the College claims and concedes the perfect use of individual conviction in matters of public and denominational concern.

In accordance with the provisions of the Statutes of the College, the sum of £1,400 was allocated at the beginning of the Session to scholarships in the various departments, and £100 at the close of the Session to the successful candidates for prizes at examination.

Of the Exhibitions of the Queen's University founded by public subscription, originated by Sir Robert Peel, the following were conferred upon students of this College.

At the first University examination in last October—

James Monteath,	1st Arts Exhibition,	£20 for three years.
James O. Wylie,	2nd " "	£15 " "
Robert Morrow,	3rd " "	£15 for two years, and £10 for third year.
John Walker Craig,	1st in Classics,	£10 for three years.

At Entrance—

Edward Stack,	1st in English Composition.
John Thomas Halliday,	2nd " "
Robert M'Mordie,	1st in Geometry.
Ross Scott,	2nd " "

The Tennant and Dennon Exhibitions of £5 each were conferred upon the students from the Royal Belfast Academical Institution.

The Wilson Exhibition of £20 was divided between two students.

Dr. Sullivan's Exhibitions of £60 per annum are still being paid; one of £15 was conferred last October; two others, one of £30, and one of £15, conferred by him previously, being already filled.

Mr. Charters' Exhibitions, one of £50 in Medicine, two of £15 each, and four of £10 each in Literature and Science, continue to be awarded, each tenable for one year.

Mr. Coates' Exhibition of £30 in the department of Engineering was also awarded last Session to a senior student.

The want of well-organized preparatory schools in most of the towns and districts in Ireland has often been brought under the notice of your Majesty's government, and, from this deficiency of supply, the Irish universities and colleges, the professions and the community generally, are placed at great disadvantage. Of this, irresistible evidence is presented in the reports of various commissions, and the uncontradicted statements of numerous influential deputations. I regret that the important reports to parliament, and the urgent representations thus made, have not been acted on by the executive and by parliament; for it is as practicable as it is expedient to adopt measures to encourage the intermediate education required, which, so far from repelling or diminishing voluntary effort on the part of teachers, would only tend, when rightly applied, to stimulate and extend it. Besides diffusing more widely the blessings of education to the country at large, one result of this would be the encouragement it would afford to teachers to aim at a higher standard of position and of classification.

I wish to direct attention to the ample returns I have furnished in the Appendix of the state and condition of the College, comprising the number of students, and the amount of fees paid to each Professor, the number of lectures delivered from each Chair, including the classes of the Summer Session, together with the amounts of expenditure, the enlarged digest of subjects, and the papers used at the various examinations.

All of which is testified on behalf of this College by your Majesty's dutiful servant,

P. SHULDHAM HENRY.

QUEEN'S COLLEGE, BELFAST,

1st July, 1867.

APPENDIX.

APPENDIX, No. 1.

QUEEN'S COLLEGE, BELFAST, and QUEEN'S UNIVERSITY.

THE COLLEGE is a Corporation under the name and style of "QUEEN'S COLLEGE, BELFAST." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 66, intituled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act, it was determined to found three Colleges. Belfast, Cork, and Galway, were selected as the sites of these Colleges, and on the 30th day of December, 1845, letters patent were issued, incorporating them. The Presidents and Vice-Presidents of the three Colleges were formed into a Board, called "The Board of Queen's Colleges," for the purpose of drawing up the statutes and arranging the system of education to be pursued in them.

On the 4th of August, 1849, the Professors were appointed, and the Colleges opened for the reception of students on the 30th October, in the same year.

Letters patent, constituting the statutes, were issued on the 11th of December, 1849, and a further charter was issued in the year 1863.

*Appendix,
No. 1.*

Queen's
College,
Belfast, and
Queen's
University.

THE COUNCIL OF THE COLLEGE.

The President.

The Vice-President.

Wyville Thomson, LL.D., Professor of Natural History.

Alexander Gordon, M.D., Professor of Surgery.

James Thomson, A.M., Professor of Civil Engineering.

C. MacDouall, LL.D., Professor of Greek.

P. Redfern, M.D., Professor of Anatomy.

J. Purser, M.A., Professor of Mathematics.

PROFESSORS.

The Greek Language, . . .	Charles MacDouall, LL.D., M.R.A.S.
The Latin Language, . . .	William Nesbitt, M.A.
History and English Literature, . . .	Charles Duke Yonge, B.A. Oxon.
Modern Languages, . . .	A. L. Meissner, PH.D.
The Celtic Languages, . . .	[Vacant.]
Mathematics, . . .	John Purser, M.A.
Natural Philosophy, . . .	John Stevelly, LL.D.
Chemistry, . . .	Thomas Andrews, M.D., F.R.S., M.R.I.A.
Natural History, . . .	Wyville Thomson, LL.D., F.R.S.E., F.G.S., M.R.I.A.
Mineralogy and Geology, . . .	
Logic and Metaphysics, . . .	Rev. James M'Cosh, LL.D.
Civil Engineering, . . .	James Thomson, C.E., A.M.
Agriculture, . . .	John F. Hodges, M.D., F.C.S.
Anatomy and Physiology, . . .	Peter Redfern, M.D. Lond., F.R.C.S.
Practice of Medicine, . . .	James Cuming, M.D.
Practice of Surgery, . . .	Alexander Gordon, M.D.
Materia Medica, . . .	James Seaton Reid, M.D.
Midwifery, . . .	William Burden, M.D.
English Law, . . .	Echlin Molyneux, A.M.
Jurisprudence and Political Economy, . . .	T. E. Cliffe Leslie, LL.B.

Appendix,
No. 1.

Queen's
College,
Belfast, and
Queen's
University.

OFFICE BEARERS.

Curator of Museum,	.	.	The Professor of Mineralogy and Geology.
Registrar,	.	.	Rev. Richard Oulton, B.D.
Librarian,	.	.	Rev. George Hill.
Bursar,	.	.	Alexander Dickey, Esq.

DEANS OF RESIDENCES.

United Church of England and Ireland,	.	Rev. Edward A. Hoare, A.B.
General Assembly of the Pres- byterian Church in Ireland,	.	Rev. Josias Leslie Porter, D.D., LL.D.
Irish Association of Non-Sub- scribing Presbyterians,	.	Rev. John Porter.
Wesleyan Methodists,	.	Rev. Joseph Wm. McKay.

The students of the College are either Matriculated or Non-matriculated. All the courses for Matriculated students in Arts, including the Department of Civil Engineering, and also in the Faculties of Medicine and of Law, will be found in the Calendar, which is published annually.

Non-matriculated students, on paying the regulated class fees, and signing an engagement to observe order and discipline in the College, are permitted, without undergoing a preliminary examination, to attend any separate course or courses of Lectures; but are not permitted to become candidates for Scholarships or Prizes, or to enjoy other privileges of the Matriculated students.

Students in any of the Faculties can be admitted *ad eundem* from the other Queen's Colleges, or from any University capable of granting degrees.

COLLEGIATE SCHOLARSHIPS.

In the FACULTY OF ARTS—30 Junior Scholarships, of £24 each, are awarded to Undergraduates—15 for proficiency in Literature, and 15 for proficiency in Science; also, 8 Senior Scholarships, of £40 each, to Graduates, one being limited to students who have also completed the course for the degree of LL.B.; and 5 Scholarships, of £20 each, to Engineering Students.

In the FACULTY OF MEDICINE—8 Junior Scholarships, of £25 each, are awarded.

In the FACULTY OF LAW—3 Junior Scholarships, of £20 each, are awarded.

SCHOLARSHIPS AWARDED IN THE SEVERAL FACULTIES, 1865-66.

- 8 Senior Scholarships awarded.
- 20 Junior Scholarships in Arts awarded.
- 5 Engineering Scholarships.
- 8 Medical Scholarships.
- 3 Law Scholarships.

1866-67.

- 8 Senior Scholarships awarded.
- 21 Junior Scholarships in Arts awarded.
- 4 Engineering Scholarships.
- 8 Medical Scholarships.
- 3 Law Scholarships.

By an order of Her Majesty in Council, of 21st May, 1855, applying to the Civil Service, it is ordained that "every person nominated to a junior situation should obtain a certificate of qualification before entering on his duties." The ordinary classes in Queen's College embrace the branches required in the Examinations for the Civil Service, and also in the Examination for students intending to become candidates for commissions in the Royal Artillery and Engineers, and for appointments to the Civil Service of India, both of which are now thrown open to public competition.

QUEEN'S UNIVERSITY IN IRELAND.

Appendix,
No. 1.

The charter founding the Queen's University in Ireland received the Royal sanction in the year 1850, and it provides that its Senate should have the power of conferring upon the students of the Queen's Colleges of Belfast, Cork, and Galway, such degrees and distinctions, in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. It further ordains that any of the students of the three Queen's Colleges, who shall have obtained such degrees in any of the several Faculties of Arts, Medicine, and Law, as shall be conferred by the Chancellor and Senate of the Queen's University, shall be fully possessed of all such rights, privileges, and immunities, as belong to similar degrees granted by other Universities or Colleges, and shall be entitled to whatever rank and precedence is derived from similar degrees granted by other Universities.

By the charter of the Queen's University, candidates for Degrees in Medicine are required to have attended *at least two courses of Medical Lectures* in some one of the Queen's Colleges. For the remainder of the courses of Medical Lectures, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

The Chancellor and Senate also have the power of admitting, by special grace, Graduates of other Universities to similar and equal degrees.

In order to obtain a degree or diploma in the Queen's University it is necessary to enter the College as a Matriculated Student, to pass the entrance or Matriculation Examination, and to pursue a fixed course of study.

The Matriculated Students may be classified as follow:—

I.	Those intending to proceed to the Degrees of A.B. and A.M.
II.	“ “ Degree of M.D.
III.	“ “ Diploma of Elementary Law.
IV.	“ “ Degrees of LL.B. and LL.D.
V.	“ “ Diploma of Civil Engineering.
VI.	“ “ Diploma of Surgery.

THE SENATE.

Chancellor.—The Right Honorable George William Frederick, Earl of Clarendon, K.G., G.C.B., &c.

Vice-Chancellor.—The Right Hon. Maziere Brady, P.C., M.R.I.A., &c.

The Right Honorable William, Earl of Rosse, K.ST.P., M.R.I.A., &c.

The Right Honorable Francis Blackburne, LL.D., V.C.T.C.D., M.R.I.A.

The Right Hon. David R. Pigot, Lord Chief Baron of the Exchequer, M.R.I.A., &c.

The Rev. P. Shuldham Henry, D.D., President Queen's College, Belfast.

Sir Robert Kane, F.R.S., M.R.I.A., &c., President Queen's College, Cork.

Edward Berwick, Esq., President Queen's College, Galway.

Sir Richard Griffith, Bart., LL.D., M.R.I.A., Commissioner of Public Works.

Sir Dominic J. Corrigan, Bart., M.D., M.R.I.A., Physician in Ordinary to the Queen in Ireland.

Major-General Sir Thomas Aiskew Larcom, R.E., K.C.B., LL.D., F.R.S., M.R.I.A., &c.

James Gibson, A.M., M.R.I.A., Barrister-at-Law.

The Right Hon. James Henry Monahan, Lord Chief Justice of the Common Pleas.

Robert Adams, A.M., M.D., F.R.C.S.

Thomas A. Shillington, Esq., J.P.

The Right Honorable Sir Robert Peel, Bart., M.P.

The Right Reverend the Lord Bishop of Killaloe, D.D.

His Grace the Archbishop of Dublin.

The Right Honorable the Earl of Dunraven and Mount-Earl, K.P.

The Lord Talbot de Malahide, F.R.S., P.R.I.A.

The Lord Clermont, D.L.

Right Honorable William Monsell, M.P.

Right Honorable Thomas O'Hagan, Justice Common Pleas.

William K. Sullivan, esq., PH.D.

David Ross, M.A., LL.B.

Secretary.—G. Johnstone Stoney, M.A.—Office, Dublin Castle.

The Senate holds its sitting in Dublin Castle, where the examinations of the students of the three Colleges, for Graduation and University Exhibitions, are annually conducted by Examiners appointed by the Senate from year to year.

APPENDIX, No. 2.

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, in each Year.

CLASS.	SESSION.									
	1849-50.	'50-51.	'51-52.	'52-53.	'53-54.	'54-55.	'55-56.	'56-57.	'57-58.	
Greek—1st year, ...	71	47	28	16	21	26	29	24	31	
„ 2nd „	—	27	18	7	11	12	14	12	13	
„ Higher, ...	—	—	—	—	—	—	—	—	—	
Latin—1st year, ...	63	45	27	19	21	24	27	19	33	
„ 2nd „	—	27	17	6	11	11	13	10	11	
„ Higher, ...	—	—	—	—	—	—	—	—	—	
The English Language, ...	52	46	28	20	24	28	31	24	36	
History and English Literature, } Senior „ „ „ } Modern Languages (French, Ger- man, Italian), ...	—	—	25	15	20	16	20	19	20	
Senior „ „ „	62	36	41	27	34	37	29	40	40	
„ „ „	—	20	28	16	15	15	19	12	16	
The Celtic Languages, ...	<i>The Lectures in each Session open to the Public.</i>								—	
Mathematics—1st year, ...	86	58	40	25	29	33	30	35	39	
„ 2nd „	—	12	11	11	13	11	15	17	16	
„ Higher, ...	—	—	—	—	—	—	—	—	—	
Nat. Philosophy—Higher Class, ...	—	—	—	—	—	6	6	8	7	
„ Mathematical Physics, &c.	32	32	46	24	29	23	24	19	26	
„ Experimental Physics, ...	48	59	57	29	40	34	36	37	41	
„ Practical Mechanics, ...	7	3	6	3	4	3	3	2	—	
Natural Philosophy applied, ...	—	—	—	—	—	—	—	—	7	
Chemistry, ...	37	53	63	44	51	60	50	70	60	
Practical Chemistry, ...	6	7	14	10	15	14	12	10	11	
Laboratory, ...	—	6	8	8	9	9	10	15	10	
Zoology, ...	12	34	35	29	31	43	31	43	34	
Botany, ...	12	49	46	35	37	46	36	44	34	
Physical Geography, ...	—	—	29	17	21	19	20	21	28	
Logic, ...	3	—	27	17	21	26	20	27	22	
Metaphysics, ...	—	—	18	15	16	11	17	20	15	
Higher Logic and Metaphysics, ...	—	—	6	7	7	8	6	7	9	
Mineralogy and Geology, ...	<i>Public.</i>	6	14	13	15	13	9	20	13	
Surveying, ...	10	9	9	6	6	9	4	—	—	
Civil Engineering, ...	—	4	6	3	4	3	4	17	14	
Theory of Agriculture, ...	11	8	7	2	6	5	5	4	7	
Practice of Agriculture, ...	—	5	3	2	5	5	1	1	3	
Diseases of Farm Animals, ...	—	5	3	2	5	5	1	1	4	
Medical Jurisprudence, ...	2	8	14	10	13	8	10	15	16	
Anatomy, ...	25	36	48	45	44	51	44	39	39	
Practical Anatomy, ...	27	32	35	49	41	46	53	33	41	
Practice of Medicine, ...	9	17	17	12	15	18	33	27	19	
Practice of Surgery, ...	24	15	26	29	28	30	48	32	30	
Materia Medica, ...	11	14	16	17	17	23	25	11	18	
Midwifery, ...	14	10	12	16	17	18	24	13	7	
Law of Property, ...	17	16	17	15	11	5	10	14	12	
Equity of Bankruptcy, ...										
Common and Criminal Law, ...										
Evidence and Pleading, ...										
Jurisprudence and Political Eco- nomy, Arts, ...	—	—	12	2	9	6	8	2	18	
Civil Law, ...	11	11	13	8	10	5	9	10	10	
Constitutional, Colonial, and International Law, ...										
Jurisprudence, ...										
Arabic, ...	—	—	—	—	—	—	—	—	—	
Hindustani, ...	—	—	—	—	—	—	—	—	—	
Sanskrit, ...	—	—	—	—	—	—	—	—	—	

APPENDIX, No. 2—continued.

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, in each Year—continued.

CLASS.	SESSION.								
	'58-59.	'59-60.	'60-61.	'61-62.	'62-63.	'63-64.	'64-65.	'65-66.	'66-67.
Greek—1st year, . . .	36	45	69	81	83	66	79	63	49
„ 2nd „ . . .	17	23	25	49	63	44	40	49	21
„ Higher, . . .	5	4	4	7	7	9	12	6	4
Latin—1st year, . . .	34	46	69	84	83	65	78	64	50
„ 2nd „ . . .	18	22	23	49	60	40	33	44	40
„ Higher, . . .	2	3	2	6	6	8	7	4	6
The English Language, . . .	41	49	72	85	85	70	80	67	49
History, . . .	24	24	28	{ 5	8	6	4	4	5
English Literature, . . .				{ 30	41	52	48	42	52
Modern Languages (French, German, Italian), . . .	50	76	140	124	110	99	110	115	109
Senior „ . . .	13	17	10	54	43	26	36	36	46
The Celtic Languages, . . .	<i>The Lectures in each Session open to the Public.</i>								
Mathematics—1st year, . . .	45	61	83	93	102	85	92	75	62
„ 2nd „ . . .	14	13	13	13	15	20	17	19	12
„ Higher, . . .	4	6	3	—	5	6	4	4	6
Nat. Philosophy—Higher Class, . . .	4	9	—	—	—	—	5	4	—
„ Mathematical Physics, &c. . .	25	24	64	67	72	69	60	68	56
„ Experimental Physics, . . .	28	42	87	86	94	95	87	120	104
Natural Philosophy applied, . . .	3	4	4	—	2	5	6	7	4
Chemistry, . . .	74	81	64*	89	89	81	93	95	91
Practical Chemistry, . . .	14	21	21	20	24	28	44	37	44
Laboratory, . . .	11	10	12	15	15	8	14	16	16
Zoology, . . .	63	56	37*	57	66	90	82	84	92
Botany, . . .	62	55	40*	56	62	90	92	27	50
Physical Geography, . . .	23	28	30	7†	7	—	—	—	—
Logic, . . .	29	29	35	65	66	57	49	68	52
Metaphysics, . . .	19	15	24	22	34	40	40	41	39
Higher Logic, . . .	8	—	—	10	12	25	14	24	33
Mineralogy and Geology, . . .	11	16	7‡	11	10	12	14	15	5
Engineering, 1st year, . . .	7	12	9	10	11	15	15	14	12
Engineering, 2nd year, { lectures, . . .	3	4	4	6	11	8	{ 12	10	8
„ { practice, . . .							{ 12	9	8
Engineering, 3rd year, { lectures, . . .	—	—	—	—	3	7	{ 7	7	7
„ { practice, . . .							{ 7	7	5
Theory of Agriculture, . . .	7	7	6	6	6	—	—	—	—
Practice of Agriculture, . . .	1	4	3	1	—	—	—	—	—
Diseases of Farm Animals, . . .	2	3	2	1	—	—	—	—	—
Medical Jurisprudence, . . .	13	17	14	18	16	25	30	28	35
Anatomy, . . .	59	60	86	83	83	87	99	109	127
Practical Anatomy, . . .	44	62	80	85	91	96	126	124	149
Practice of Medicine, . . .	22	29	25	42	27	36	44	48	67
Practice of Surgery, . . .	29	39	51	53	53	46	48	55	77
Materia Medica, . . .	22	27	33	38	37	29	38	47	47
Midwifery, . . .	17	14	26	36	22	34	19	23	36
Law of Property, . . .	13	16	16	14	12	12	14	19	13
Equity and Bankruptcy, . . .									
Common and Criminal Law, . . .									
Evidence and Pleading, . . .	9	7	10	8	18	17	20	15	16
Political Economy, Arts, . . .									
Civil Law; Constitutional, Colonial, and International Law; Jurisprudence, . . .	11	17	10	12	11	10	11	19	11
Arabic, . . .	—	1	—	—	—	—	—	—	—
Hindustani, . . .	—	2	3	2	3	—	—	—	—
Sanskrit, . . .	—	6	3	4	5	4	4	—	—
Operative Surgery, . . .	—	—	—	—	11	2	—	16	23

* No Arts Students this Session, owing to change of Statutes.

† Not now required in third year Arts.

‡ No Engineering Students this Session, owing to change of Statutes.

No. 3.

Professor in the Queen's College, Belfast, in each Year.

1857-58.	1858-59.	1859-60.	1860-61.	1861-62.	1862-63.	1863-64.	1864-65.	1865-66.	1866-67.
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
51 0 0	78 0 0	*93 5 0	*131 15 0	*186 0 0	*187 15 0	*221 0 0	233 10 0	212 0 0	131 0 0
53 0 0	67 0 0	†90 0 0	127 15 0	185 0 0	185 15 0	211 0 0	220 10 0	202 0 0	167 0 0
57 10 0	69 0 0	94 15 0	117 5 0	155 10 0	164 5 0	163 10 0	162 10 0	131 10 0	143 10 0
46 15 0	68 10 0	39 0 0	58 10 0	106 5 0	134 10 0	173 10 0	143 0 0	183 10 0	184 10 0
69 10 0	97 10 0	139 10 0	156 0 0	183 5 0	211 5 0	201 0 0	208 0 0	173 0 0	143 0 0
72 0 0	66 10 0	61 5 0	180 10 0	178 15 0	194 10 0	183 0 0	186 0 0	208 0 0	198 0 0
113 10 0	147 5 0	184 0 0	167 0 0	195 15 0	210 5 0	213 10 0	294 10 0	252 0 0	277 10 0
206 0 0	262 10 0	307 0 0	427 10 0	†432 10 0	†425 10 0	†453 10 0	567 10 0	544 0 0	643 14 0
52 10 0	105 5 0	94 10 0	70 0 0	96 10 0	120 5 0	157 0 0	170 0 0	144 0 0	154 0 0
96 0 0	120 0 0	159 10 0	277 0 0	319 5 0	270 15 0	231 0 0	278 0 0	247 0 0	268 0 0
20 5 0	21 15 0	24 15 0	11 10 0	16 5 0	20 10 10	22 0 0	25 0 0	24 0 0	9 0 0
31 15 0	28 10 0	36 10 0	28 10 0	25 15 0	37 10 0	38 0 0	51 0 0	51 0 0	46 0 0
21 0 0	25 0 0	28 0 0	28 0 0	25 0 0	21 0 0	18 0 0	20 0 0	25 0 0	23 0 0
22 0 0	22 15 0	24 15 0	32 0 0	40 15 0	70 0 0	82 0 0	97 0 0	79 0 0	63 0 0
40 5 0	31 5 0	47 0 0	43 0 0	§44 0 0	§35 15 0	43 0 0	55 0 0	43 0 0	67 0 0
26 0 0	37 0 0	44 0 0	37 0 0	64 10 0	46 0 0	59 0 0	74 0 0	77 0 0	103 0 0
34 0 0	46 0 0	65 10 0	79 13 0	84 12 0	96 11 0	73 0 0	82 0 0	94 0 0	137 0 0
34 0 0	39 0 0	50 0 0	60 0 0	69 0 0	70 0 0	59 0 0	73 0 0	83 0 0	86 0 0
12 0 0	28 0 0	25 0 0	48 0 0	63 0 0	36 0 0	66 0 0	26 0 0	42 0 0	64 0 0
25 0 0	26 0 0	22 0 0	—	—	—	—	—	—	—

* Besides for Sanskrit and Hindustani, 1859-60, £35; 1860-61, £22 10s.; 1861-62, £25; 1862-63, £32 10s.; 1863-64, £20; 1864-5, £20.

† Besides for Arabic in 1859-60, £5.

‡ The Professor of Anatomy pays to his Demonstrator a portion of the fees for Practical Anatomy.

§ No endowment for Medical Jurisprudence. Professor Hodges delivers the lectures, receiving only class fees.

ALEXANDER DICKEY, Bursar.

No. 4.

Appendix,
No. 4.

to the Queen's College, Belfast, ending 31st March, 1866.

Expendi-
ture of One
Year's
Additional
Grant.

3. Libraries, Museum, and Collection of Objects of the Department
of the Natural Sciences:

	£	s.	d.
Library of Natural History,	20	1	1
„ Geology and Mineralogy,	3	7	5
Museum of Natural History,	74	18	3
„ Geology and Mineralogy,	11	14	3
„ Materia Medica,	1	6	0
	111	7	0

4. Libraries, Museums, and Collections of Objects of the Department
of Engineering:

Library of Engineering,	53	14	5
Instruments and Collections of Engineering,	0	8	0
	54	2	5

Appendix,
No. 4.

APPENDIX, No. 4—continued.

Expendi-
ture of One
Year's
Additional
Grant.ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT
to the Queen's College, Belfast, ending 31st March, 1866—
continued.

5. Museum and Library of Medical Science:

	£	s.	d.
Library of Medical Works, ...	93	17	8
Anatomical and Pathological Museums, and Rent of Anatomical Rooms, ...	63	19	8
Surgical Museum, ...	3	6	0
Medical Jurisprudence, ...	15	1	7
Midwifery, ...	2	0	0
	178	4	11

6. Library of Metaphysical, Legal, and Economical Science:

Law, Jurisprudence, and Political Economy, ...	14	13	4
Metaphysics, ...	24	6	10
	39	0	2

7. Printing, Stationery, Advertising, Postages, Office Expenses, &c., 306 9 0

8. Heating and Lighting, ... 93 19 11

9. Grounds, ... 50 10 4
1,099 5 3

Balance in Bank of Ireland Office, 31st March, 1866, . 351 6 0

Total, ... 1,450 11 3

Amount of One Year's additional Grant, ... 1,000 0 0
 College and Matriculation Fees, ... 124 5 0
 Received for Calendars and Fines, ... 7 16 6
 Balance in Bank, 31st March, 1865, ... 318 9 9
 Total, ... 1,450 11 3

The Accounts of the College up to 31st March, 1866, have been examined and
 found correct by the Commissioners for Auditing the Public Accounts.

April, 1867.

ALEXANDER DICKEY, *Bursar.*

APPENDIX, No. 5.

GENERAL CLASS EXAMINATIONS, Queen's College, Belfast.

	SESSION 1865-66.			A. M.	P. M.	SESSION 1866-67.			A. M.	P. M.
The English Language, ...	Saturday,	January	13	—	12—4	Saturday,	January	12	—	12—4
Logic, ...	Saturday,	February	10	9—12	—	Saturday,	February	9	9—12	—
Physical Geography, ...	Wednesday,	February	28	10—1	—	Thursday,	February	28	9—12	—
Mineralogy and Geology, ...	Wednesday,	February	28	10—1	—	Thursday,	February	28	—	2—5
Zoology, ...	Saturday,	March	9	10—1	—	Saturday,	March	2	9—12	—
Metaphysics, ...	Tuesday,	March	27	9—12	and 2—5	Tuesday,	April	16	9—12	and 2—5
English Literature, ...	Thursday,	March	29	9—12	and 2—5	Thursday,	April	18	9—12	and 2—5
Practical Anatomy, ...	Saturday,	April	21	9—12	—	Saturday,	April	20	9—12	—
Practice of Medicine, ...	Thursday,	April	26	9—12	—	Friday,	April	26	9—12	—
Midwifery, ...	Thursday,	April	26	—	2—5	Friday,	April	26	—	2—5
Anatomy and Physiology, ...	Friday,	April	27	9—12	and 2—5	Saturday,	April	27	9—12	and 2—5
Materia Medica, ...	Saturday,	April	28	9—12	—	Monday,	April	29	9—12	—
Practice of Surgery, ...	Saturday,	April	28	—	2—5	Monday,	April	29	—	2—5
Medical Jurisprudence, ...	Monday,	April	30	9—12	—	Tuesday,	April	30	—	2—5
Modern Languages, ...	Tuesday,	May	29	9—12	and 2—5	Tuesday,	May	28	9—12	and 2—5
Greek (First Year), ...	Wednesday,	May	30	9—12	„ 2—5	Wednesday,	May	29	9—12	„ 2—5
„ (Second Year), ...	Thursday,	May	31	9—12	„ 2—5	Thursday,	May	30	9—12	„ 2—5
Latin (First Year), ...	Thursday,	May	31	9—12	„ 2—5	Thursday,	May	30	9—12	„ 2—5
„ (Second Year), ...	Wednesday,	May	30	9—12	„ 2—5	Wednesday,	May	29	9—12	„ 2—5
Engineering, 1st, 2nd, and 3rd years, ...	Thursday,	May	31	9—12	„ 2—5	Thursday,	May	30	9—12	„ 2—5
Office and Fieldwork, ...	Wednesday,	May	30	—	2—5	Wednesday,	May	29	—	2—5
Mathematics, ...	Friday,	June	1	9—12	and 2—5	Friday,	May	31	9—12	„ 2—5
Natural Philosophy, ...	Saturday,	June	2	9—12	„ 2—5	Saturday,	June	1	9—12	„ 2—5
Chemistry, ...	Monday,	June	4	9—12	„ 2—5	Monday,	June	3	9—12	„ 2—5
History, ...	Tuesday,	June	5	—	2—5	Tuesday,	June	4	9—12	—

of Queen's College, Belfast.

General Examination of Students in Law, and also of other Students in Political Economy, Botany, and Practical Chemistry at the close of the Lectures on these subjects.

APPENDIX, No. 6.

RETURN of the NUMBER of LECTURES delivered by each Professor in the Queen's College, Belfast, in each YEAR.

—	1849-50.	'50-51.	'51-52.	'52-53.	'53-54.	'54-55.	'55-56.	'56-57.	'57-58.	'58-59.	'59-60.	'60-61.	'61-62.	'62-63.	'63-64.	'64-65.	'65-66.	REMARKS.
Professor of— Greek, ...	135	232	244	246	236	240	234	235	236	350	500*	460*	440*	360*	360	360	360	In addition, examining nu- merous exercises.
Latin, ...	162	197	216	221	189	196	232	230	230	275	398	234	234	234	230	324	324	Do. do.
History and English Literature, ...	35	55	98	91	104	100	105	105	99	110	123	92	154	146	140	167	167	Besides correcting about 700 exercises.
Modern Languages, .	208	330	324	307	306	305	319	340	369	307	340	372	372	360	356	356	356	
Celtic, ...	6	6	6	6	6	6	6	6	6	6	6	6	—	—	—	—	—	Open to the Public without charge.
Mathematics, . . .	135	256	333	248	246	320	346	322	330	400	400	370	370	316	325	330	317	Besides three hours each week on which the Senior Scholar meets the Junior Division.
Natural Philosophy,	122	257	233	209	256	250	255	307	300	300	242	242	213	162	160	160	190	In addition, arranging appa- ratus, which occupies as much time as the lectures.
Chemistry, ...	134	136	137	129	132	130	138	142	142	140	132	132	132	132	130	130	130	In addition, superintending the working pupils, of whom from eight to twelve are admitted each year by examination to the labora- tory without charge.
Practical Chemistry,	36	36	36	36	36	36	36	36	34	36	36	36	36	36	36	36	55	
Natural History, .	120	120	133	137	139	138	142	140	143	140	140	140	140	140	140	140	140	Including lectures in Phy- sical Geography, delivered free to all students.

Mineralogy and Geology, . . .	Public	86	54	59	54	55	49	59	52	59	52	52	52	52	52	52	52	In addition, daily attendance as Curator in the Museum.
Logic & Metaphysics, . . .	—	—	78	142	176	175	164	177	179	167	140	158	194	208	195	195	195	In addition, criticising above 600 essays in each session.
Civil Engineering, . . .	134	138	140	136	140	136	147	118	100	194	196	220	198	328	319	236	247	Including practical work under the direction of the Professor.
Agriculture, . . .	172	206	205	212	209	213	218	186	190	166	166	156	156	50	50	50	41	Including lectures on Medical Jurisprudence, for which there is no salary.
Anatomy and Physiology, . . .	115	116	115	115	114	115	117	113	115	115	115	112	108	108	224	261	260	In addition, daily practical teaching in the dissecting-room for three hours by the Professor, and four hours by his assistant.
Practice of Medicine, Practice of Surgery, . . .	93 93	93 94	92 93	92 91	93 91	94 92	94 94	85 94	75 94	95 94	93 94	95 94	95 94	95 93	95 93	95 93	95 93	Besides about twenty-five lectures each session on Operative Surgery.
Materia Medica, Midwifery, . . .	92 92	91 92	91 92	93 91	90 90	90 93	92 93	80 93	84 93	84 95	84 90	84 80	84 80	84 76	84 76	84 76	84 76	Besides practical instruction to students which may be required at any hour throughout the year.
English Law, . . .	24	48	72	96	96	96	96	■	■	96	72	72	96	■	96	96	96	No third year Class in 1859-60, or fourth year Class in 1860-61.
Jurisprudence and Political Economy, . . .	24	48	96	120	120	120	120	120	120	96	120	120	120	120	120	120	120	

The above Return gives the number of Meetings of one hour each, in each Class. The system of instruction includes, not merely formal Lectures, but also examination in the progress of the course; in some classes these examinations are held daily; in others on fixed days of the week, according to the nature of the subject. The Professors also conduct the General Scholarship Examinations; and some of them, in addition, the Matriculation and Supplemental Examinations.

* Including about 110 on Sanskrit and Hindustani.

Appendix,
No. 8.
Lectures
delivered
by Profes-
sors.

OCTOBER EXAMINATIONS of Queen's College, Belfast, 1867.

Days.	Hours.	First Year Students.	Second Year Students.	Third Year Students.	Fourth Year Students.
Tuesday, Oct. 15.	9—12		Suppl. Ex. { English. Mod. Lang. Math.	Suppl. Ex.—Mod. Lang., Math., Nat. Phil., Chem.	Senior Schol.—Latin.
	2—5		Suppl. Ex.—Greek, Latin.	Suppl. Ex.—Greek, Latin, Logic.	Senior Schol.—Latin.
Wednesday, Oct. 16.	9—12		Liter. Schol.—Greek.		Senior Schol.—Greek.
	2—5		Liter. Schol.—Greek.		Senior Schol.—Greek.
Thursday, Oct. 17.	9—12		Med. Engin. } Schol.—Chem.	Previous	Senior Schol.—Chem.
	2—5	Matric.—Math.	Med. Engin. } Schol.—Chem.	Examination, in Arts and Engineering, of Queen's University.	Senior Schol.—Chem.
Friday, Oct. 18.	9—12	Matric.—Greek, Latin.			
	2—5				
Saturday, Oct. 19.	9—12	Matric.—English, in Arts only.			Senior Schol.—Mod. Hist.
	2—5	Matric.—English, in Medicine, &c.			Senior Schol.—Mod. Hist.

Monday, Oct. 21.	9—12	Lists of Matriculated Students to be made out.	Med. Schol.—Botany.	Engin. Schol. { Geol. and Phys. Geog.	Senior Schol.—Nat. Hist.
	2—5		Med. Schol.—Zoology. Liter. Schol.—English.		Senior Schol.—Nat. Hist.
Tuesday, Oct. 22.	9—12	Science } Schol.—Math. Med. } Engin. }	Science } Schol.—Math. Engin. }	Engin. Schol.—Math.	Senior Schol.—Math.
	2—5	Science } Schol.—Math. Med. } Engin. }	Science } Schol.—Math. Engin. } Med. Schol.—Anat. and Phys.	Engin. Schol.—Math. Med. Schol.—Anat. and Phys.	Senior Schol.—Math. Med. Schol.—Prac. of Midw.
Wednesday, Oct. 23.	9—12	Liter. } Schol.—English. Med. }	Engin. Schol.—Exp. Phys.	Med. Schol.—Prac. Chem.	Senior Schol.—Nat. Phil. Med. Schol.—Prac. of Med.
	2—5			Engin. Schol.—Nat. Phil.	Senior Schol.—Nat. Phil.
Thursday, Oct. 24.	9—12	Liter. } Schol.—Latin. Med. }	Liter. Schol.—Latin. Engin. Schol.—Geo. Draw.	Engin. Schol.—C. Engin. Med. Schol.—Mat. Med.	Med. Schol.—Med. Jur. Senior Schol.—Pol. Econ.
	2—5	Liter. } Schol.—Latin. Med. }	Liter. Schol.—Latin. Engin. Schol.—Geo. Draw.	Engin. Schol.—C. Engin.	Senior Schol.—Pol. Econ. Med. Schol.—Surg. Anat.
Friday, Oct. 25.	9—12	Liter. } Schol.—Greek. Med. }	Liter. Schol.—Mod. Lang.		Senior Schol.—Mod. Lang. Senior Schol.—Metaph. Med. Schol.—Anatomy.
	2—5	Liter. } Schol.—Greek. Med. }	Liter. Schol.—Mod. Lang.		Senior Schol.—Mod. Lang. Senior Schol.—Metaph. Med. Schol.—Physiology.
Students passing the Supplementary Examinations complete the previous year, and take rank accordingly					

HOURS OF LECTURES,—SESSION 1866-67.

Hours.	ARTS.			CIVIL ENGINEERING.			MEDICINE.	
	1st Year.	2nd Year.	3rd Year.	1st Year.	2nd Year.	3rd Year.		
9 till 10	<i>French.</i> Monday Wednesday Thursday <i>German.</i> Tuesday Friday	<i>Mathematics.</i> Monday Tuesday Wednesday Thursday Friday		<i>French.</i> Monday Wednesday Thursday <i>German.</i> Tuesday Friday	<i>Mathematics.</i> Monday Tuesday Wednesday Thursday Friday			
10 till 11	<i>Mathematics.</i> Monday Tuesday Wednesday Thursday Friday	<i>French.</i> Monday Wednesday Thursday <i>German.</i> Tuesday Friday	<i>Honor Classes.</i>	<i>Mathematics.</i> Monday Tuesday Wednesday Thursday Friday				
11 till 12	<i>Latin.</i> Monday Wednesday Friday	<i>Nat. Philos.</i> <i>Exp. Phys.</i> Monday Wednesday Friday <i>Mat. Phys.</i> Tuesday Thursday	<i>Eng. Lit.</i> Monday Wednesday Friday	<i>Exp. Phys.</i> Monday Wednesday Friday <i>Geom.</i> <i>Drawing.</i> Tuesday Thursday	<i>Minerology and Geology.</i> Monday Wednesday Friday <i>Mat. Phys.</i> Tuesday Thursday	<i>Office and Field Work.</i> Tuesday Thursday	<i>Exp. Phys.</i> 3 months. Monday Wednesday Friday	<i>Prac. Chem.</i> [see below. Summer Medical Classes.]
12 till 1	<i>Greek.</i> Monday Thursday Friday	<i>Latin.</i> Monday Wednesday Friday	<i>Metaphysics.</i> Tuesday Wednesday Thursday Friday <i>History.</i> Monday Wednesday Friday	<i>Geom.</i> <i>Drawing, and Office Work.</i> Tuesday Thursday	<i>Office and Field Work.</i> Tuesday Thursday	<i>Office and Field Work.</i> Tuesday Thursday	<i>Anatomical Demonstrations.</i> Monday Tuesday Wednesday Thursday Friday	

1 till 2	English. Monday Tuesday Wednesday Friday	Greek. Monday Thursday Friday	Zool. to Mar. 1. Monday Tuesday Wednesday Friday Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Pol. Economy. Tuesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students oc- casionally on Fridays and Saturdays for some hours.	Civil Eng. Monday Wednesday	Nat. Philos. applied. Tuesday Thursday	Zool. to Mar. 1 Monday Tuesday Wednesday Friday	Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Surgery. Monday Tuesday Wednesday Thursday	Med. Juris. Friday
2 till 3	English. Monday Tuesday Wednesday Friday	Logic. Tuesday Wednesday Thursday Friday	Zool. to Mar. 1. Monday Tuesday Wednesday Thursday Friday Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Pol. Economy. Tuesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students oc- casionally on Fridays and Saturdays for some hours.	Civil Eng. Monday Wednesday	Nat. Philos. applied. Tuesday Thursday	Zool. to Mar. 1 Monday Tuesday Wednesday Friday	Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Surgery. Monday Tuesday Wednesday Thursday	Med. Juris. Friday
3 till 4	English. Monday Tuesday Wednesday Friday	Logic. Tuesday Wednesday Thursday Friday	Zool. to Mar. 1. Monday Tuesday Wednesday Thursday Friday Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Pol. Economy. Tuesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students oc- casionally on Fridays and Saturdays for some hours.	Civil Eng. Monday Wednesday	Nat. Philos. applied. Tuesday Thursday	Zool. to Mar. 1 Monday Tuesday Wednesday Friday	Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Surgery. Monday Tuesday Wednesday Thursday	Med. Juris. Friday
4 till 5	English. Monday Tuesday Wednesday Friday	Logic. Tuesday Wednesday Thursday Friday	Zool. to Mar. 1. Monday Tuesday Wednesday Thursday Friday Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Pol. Economy. Tuesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Chemistry. Monday Tuesday Wednesday Thursday Friday	Field Work and Engineering Excursions and additional Lectures for 2nd and 3rd Year Students oc- casionally on Fridays and Saturdays for some hours.	Civil Eng. Monday Wednesday	Nat. Philos. applied. Tuesday Thursday	Zool. to Mar. 1 Monday Tuesday Wednesday Friday	Bot. from May 1. Monday Tuesday Wednesday Thursday Friday	Surgery. Monday Tuesday Wednesday Thursday	Med. Juris. Friday

SUMMER MEDICAL CLASSES, COMMENCING MAY 1, 1887.

Practical Chemistry.	Monday, Tuesday, Wednesday, Thursday, Friday, from 11 A.M.
Botany.	Monday, Tuesday, Wednesday, Thursday, Friday, 1 P.M.
Experimental Physics.	Monday, Wednesday, Friday, 3 o'clock; Tuesday, Thursday, 11 A.M.

FACULTY OF LAW.—HOURS OF LECTURES.

1st Year.				2nd Year.				3rd Year.		4th Year.					
9 o'clock, P.M.	<i>Law of Property.</i> Monday Wednesday Friday	7 o'clock, P.M.	<i>Jurisprudence.</i> Monday Wednesday Friday	7 o'clock, P.M.	<i>Equity and Bankruptcy.</i> Monday Wednesday Friday	8 o'clock, P.M.	<i>Civil Law.</i> Monday Wednesday Friday	11 o'clock, A.M.	<i>Common and Criminal Law.</i> Tuesday Thursday Saturday	10 o'clock, A.M.	<i>Evidence and Pleading.</i> Tuesday Thursday Saturday	6 o'clock, P.M.	<i>Constitutional & Colonial Law.</i> Monday Wednesday Friday	1 o'clock, P.M.	<i>Medical Jurisprudence.</i> Wednesday, 8 o'clock Friday, 1 o'clock

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Digest
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AN ENLARGED DIGEST OF SUBJECTS AND COURSES PURSUED IN QUEEN'S COLLEGE, BELFAST.

GREEK—*Professor, Charles MacDonall, LL.D., M.R.A.S.*

In the Greek Class, as in all those which are attended during more than one session, the business, as well as the hours assigned to the Students of the different years, is necessarily different; but it is always distributed into three simultaneous processes, viz., public examinations, lectures more or less formal, and exercises written at home and commented on in the class.

In the first session, the complex and self-contained structure of the Greek language is subjected to a close analysis; carried out, on the one hand, by tracing words to their crude forms, by classifying terminations, both the primary and the flexional, and by discriminating among analogically correct forms those actually used in different ages and dialects; on the other hand, by exhibiting the methods by which words are combined in simple clauses, clauses are knit into sentences, and sentences compose periods less or more complicated. Some prose-work furnishes the materials for this analysis; while the Students read and translate it, or else re-translate off-hand passages read out in English before them by the Professor. Besides syntactical phenomena, the laws and characteristics of both epic and dramatic versification are expounded and exemplified, while a portion of the *Iliad* and some tragedy are used as text-books.

In the second session, while consecutive passages of Herodotus along with some Attic oration or philosophical treatise, and a portion of the *Odyssey* along with some Attic tragedy or comedy, form the basis of prelections, the previous discipline is continued and extended; the distinctions of dialect and style are more fully elucidated; the origin, growth, and fortunes of the epos, the drama, history, and other departments of literature, are more distinctly unfolded; discussions on points of mythology, geography, chronology, archæology, æsthetics, &c., are more freely introduced and more amply treated. The Students are required to turn Herodotean Greek, at sight, into Attic, altering both the forms of words and the structure of sentences; to re-translate passages into Greek prose and verse; and also to give in original essays in both forms of composition.

Considering the variety of subjects which enter simultaneously into the first and second Sessions of the Collegiate Course, the Students generally appear to give a fair share of their attention to the Greek Language and Literature. Several times in the week a considerable number voluntarily attend extra Lectures, at which no note is taken of their presence or of their absence.

In a distinct or higher class, advanced Students, generally in the third or fourth year of their Course, are exercised in the study of more difficult works than those previously read, in the higher problems of criticism and philology, and especially in composing both prose and verse.

The following text-books have been used in the successive Sessions of College from 1849–50 to 1865–66:—*Iliad*, Books III., VI., X., and from XI. to XXIV. (inclusive); *Odyssey*, Books I., II., III., IV., V., VI., VII., VIII., XI., XII., XIII., XIV.; Hesiodus, *Theogonia*; Pindarus, *Olympia*, *Pythia*, *Nemea*; Aeschylus, all the Tragedies except the *Suppliants*; Sophocles, the seven Tragedies; Euripides, *Alcestis*, *Hippolytus*, *Hecabe*, *Phoenissæ*, *Orestes*, *Helene*, *Hercules Furens*, *Bacchæ*, *Ion*, *Troades*, *Andromache*, *Iphigenia in Aulide*, *Iphigenia in Tauris*; Aristophanes, *Nubes*, *Aves*, *Ranæ*; Herodotus, Books I., II., III., IV., VII.; Thucydides, Books I., II.; Xenophon, Portions of *Anabasis* and *Cyropaedia*; Platon, *Apologia Socratis*, *Gorgias*, *Phædon*, *Phædrus*, *Philebus*, *Protagoras*, *Timæus*, *Theætetus*, and Books VII. and X. of *Respublica*; Aristoteles, *Poetica* and portions of *Rhetorica*; Demosthenes, *c. Meidiam* and *de Corona*; Aeschines, *in Ctesiphontem*.

LATIN—*Professor, William Nesbitt, M.A.*

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The Professor of Latin lectures Students of the First and Second Years each set three hours a week; attendance on the lectures being compulsory for those who take the Classes of Latin. Besides these compulsory lectures, he gives two lectures additional to Students of each of these years, attendance on which is voluntary, in which more difficult authors are read, and special attention is paid to composition. The attendance on these lectures is very good.

An honor Class has been formed of Students of the Third and Fourth Years, chiefly attended by those who are anxious to distinguish themselves in Ancient Classics at the Degree Examination.

In addition to the above, two lectures are delivered weekly on Latin composition.

The number of hours during which the Professor lectures each week is fourteen.

HISTORY AND ENGLISH LITERATURE—*Professor, Charles Duke Yonge,
A.B. Oxon.*

Class of the English Language.

The business of this Class is conducted by—

A Course of Lectures on the Origin, Formation, Inflections, and Grammar of the English Language, for which Dr. Latham's "English Language" forms in some degree the text-book;

With occasional Lectures on the rules and principles of Prose Composition, and Weekly Essays.

Class of English Literature.

The business of this Class is conducted by—

A Course of Lectures on English Literature in general, and particularly on the lives, works, and styles of the best authors in each department;

With Special Lectures also on the works appointed as the subjects for the Dublin Autumnal Examination of the ensuing year, with and without Honors;

And Fortnightly Essays.

Class of History.

The business of this class is conducted by—

Lectures on History in general;

Lectures on English History, embracing rather the larger half of the entire course;

A subsequent course on the History or that portion of the History of any other country which is selected as a subject for the Dublin Autumnal Examination of the ensuing year.

MODERN LANGUAGES—*Professor, Albert Ludwig Meissner, PH.D.*

The instruction in Modern Continental Languages embraces three courses each for French and German, extending over three terms, and a course of Italian during the first term, attendance on which is voluntary.

No entrance examination is as yet held in Modern Languages, in consequence of which the insufficiency of intermediate teaching is more apparent in this department than perhaps in any other.

Students in Arts and Medicine, and in the department of Engineering, are required to attend lectures on one Modern Language for one session. The majority select for this purpose the French language; several, however, attend

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both French and German. For Students in Arts of the second and higher years, Modern Languages form one in a group of four subjects, out of which they select two.

The work of the classes, especially during the first two years, is carried on to a great extent by means of *viva voce* questions and answers. Frequent oral examinations are held, and at each meeting of the classes a passage is translated from English into French or German.

In the First Session the Grammar is explained, and select passages are translated from French and German Classics.

In the Second Session a more extended course of the Grammar is gone through, and the Students are made acquainted with the principal authors of French and German Literature.

The first term of the Third Session is devoted to a repetition of the two preceding courses, together with Examinations on the History of French and German Literature. The Text-books are Gêruzey and Demogeot for French, and Weber and Vilmar for German. The questions and answers are given and returned in French and German respectively.

In the second term of the Third Session the Professor delivers Lectures in French and German on those periods of Literature with which the Students have already become somewhat familiarized by their previous studies.

In the third term of the Third Session the work of the second is continued, and occasional Lectures are delivered on the principles of Comparative Grammar.

Medical Students unable to attend the classes in Arts, are instructed in a separate class.

About six per cent. of the Students attending Lectures on Modern Languages are Non-Matriculated.

MATHEMATICS—Professor, John Purser, M.A.

Attendance on this Class is prescribed to all Students in the Faculty of Arts during the first year of their Course; during the second year Mathematics forms one of four Courses, out of which the Students select two.

All Students in the Department of Engineering are required to attend the Mathematical Classes during two years.

Before entering, Students are required to pass an examination in the First and Second Books of Euclid, and in a small portion of Algebra. Practically they come fairly prepared in the prescribed portions of Euclid, but a large proportion can hardly be said to possess even an elementary knowledge of Algebra. A considerable number of the Students are Candidates for Mathematical Scholarships at entrance, and these are generally well prepared in the first six Books of Euclid, and a considerable portion of Algebra and Plane Trigonometry.

On this account the instruction of the First Year in Mathematics has been given in two Divisions. The Lower Division has been carefully taken through such portions of Euclid I., II., III., IV., VI., as they had not previously prepared, and has received instructions in Algebra as far as the progressions, and in Plane Trigonometry as far as the solution of triangles, with the use of logarithms and trigonometrical tables. The instruction of the Upper Division comprises a complete Course of Algebra and Trigonometry, with the principal historical properties of the Conic Sections, treated geometrically.

The Council has sanctioned the employment of the Senior Mathematical Scholar in giving a portion of the instruction of the Lower Division. This arrangement, while it affords a greater number of hours to the Lower Division, enables the Professor of Mathematics to give more attention to the Upper Division, and has been found to work very satisfactorily.

In the Second Year the subjects of Lecture are Analytical Geometry, the Differential and Integral Calculus, and the first three sections of the Principia of Newton; and, in addition to this, when the progress of the Students has been sufficiently rapid during the early part of the Session, The Theory of Equations, and the solution of the simpler kinds of Differential Equations.

For several years past a third and higher class has been formed for the benefit of the Students competing for University honors and the Indian Civil Service Examinations. The subjects of lecture are Geometry of three dimensions, Differential Equations, and other branches of the higher Mathematics, according to the advance which the Students have made.

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THE PHYSICAL CLASSES—*Professor, John Stevelly, LL.D.*

The subjects taught in the Physical Classes are distributed under three subdivisions: Mathematical Physics, Experimental Physics, and Natural Philosophy applied.

The subjects comprised in the Course of Mathematical Physics are—Mechanics (under its several statical and dynamical subdivisions), Hydrostatics, Hydraulics, Pneumatics, Acoustics, Optics, and Astronomy. The Students who attend this class are the Matriculated Students who are seeking a Degree in Arts, the Engineering Students of the Second Year, and Non-Matriculated Students, some of whom are Candidates for the ministry in the Presbyterian Churches. Attendance at the Lectures three days in each week is imperative on all those Students, and one hour in each week is occasionally employed in asking questions from prescribed parts of Galbraith and Haughton's Manual. Two days in the week attendance is optional, when Analytical Mechanics and the higher branches of Physics are taught. In the Lectures, attendance on which is imperative, such mathematical proofs and illustrations only are introduced as a person reasonably prepared in the six first Books of Euclid and Elementary Algebra might easily comprehend. The teaching is by prelection; and although no text-books are prescribed, the ordinary elementary works on the several subjects are pointed out and referred to. At the Lectures, attendance on which is voluntary, the demonstrations and investigations are pursued in a more systematic and mathematical method, so as to require a knowledge of Analytic Geometry, Conic Sections, and the Differential and Integral Calculus. Text-books are used for the guidance of the Students attending these Lectures, who are chiefly those who are intending to compete for Honors. These text-books are Earnshaw's and Todhunter's Statics, Wilson's Dynamics, Tait's Dynamics of a Particle, Miller's Hydrostatics, Lloyd's Optics and Lectures on the Wave Theory of Light, Herschell's Astronomy, and two of Airy's Tracts, with occasional reference to Du Hamel's Cours de Mécanique, and to Poisson's Works.

The Class of Experimental Physics is attended by the same Students, and also by Agricultural Students of the Second Year, and by Medical Students of the Third Year. The subjects of these Lectures are taught entirely without mathematical demonstration, by the aid of experiments, illustrations, drawings, and models, and such works as Lardner's Hand-book, Golding Bird's Physics, Webster's Physics, Miller's Chemistry, Vol. I., Arnott's Elements, Biot, Ganot, Pouillet, Peschel, and such like standard works are referred to, and recommended to the attention of the Students. The subjects of Heat, Electricity, and Electro-Magnetism are at present chiefly taught in the Chemical Class; but the leading facts and principles are taught by selections from Biot, Pouillet, Ganot, and Miller.

The Class of Natural Philosophy applied is intended for Students in Engineering of the Third Year, by the recent University Ordinance; lectures and instructions twice in the week. The subjects embraced are the nature and estimate of work done; the kinds of work required to be done; the nature and laws of friction, and other useless resistances; the moving powers at our command, their respective nature and the laws which govern their action; the manner in which they are, by machinery, connected with and opposed to the resistances; the construction of machines; the principles of strength of materials as opposed to strains; the equilibrium of structures, frames, roofs, arches, domes; the general principles of mechanism; general maxims in the structure and working of machines; maximum effects of machines; hydraulic engines; the steam-engine. The works used as guides to the studies of the Students in this Class are selections from Lloyd's and Robinson's Mechanics, Willis's Principles of

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Mechanism, Barlow on Materials and Construction. Hodgkinson's Experimental Researches, Tredgold, Tate's Elementary Treatises and Exercises, and selected numbers of Weale's Rudimentary Series.

CHEMISTRY—*Professor, Thomas Andrews, M.D., F.R.S., M.R.I.A.*

In the Class of Chemistry the greater part of the Course is devoted to pure Chemistry; but the Elements of the Sciences of Heat and Electricity, particularly in their relations with Chemistry Proper, are also taught. The application of these sciences to the arts are particularly referred to; and it has been the constant endeavour of the Professor to communicate to the Students as precise and accurate information as possible on the subjects treated in his Lectures, and to train them to habits of careful observation and accurate thinking. With this view a weekly examination of the whole Class is held, at which the Students are subjected to a searching examination on the business of the preceding week; and further to encourage a taste for scientific inquiry, and also to train a certain number of practical chemists, a limited number of the Students are admitted, by examination, as working pupils into the chemical laboratory, where they have an opportunity of acquiring a knowledge of chemical analysis. This latter arrangement has now been in practice for several years, and has been attended with the best results.

NATURAL HISTORY—*Professor, Wyville Thomson, LL.D.*

The Zoological Department of the Course occupies the First Term and greater part of the Second, and comprehends the Outlines of Anatomy and Physiology of animals, followed by Systematic Zoology, and remarks on the distribution of animals.

The Botanical part comprehends Vegetable Anatomy and Physiology, Systematic Botany, and distribution of vegetable forms. In addition to the Class Lectures, meetings are held in the Botanic Garden, and practical excursions made into the neighbouring country.

This Course comprehends chiefly Lectures on the structure and form of continents and islands; the distribution of mountain systems, rivers, and lakes; the ocean, its currents, temperature, &c.; the atmosphere, its currents, &c.; rain, snow, &c. The preceding subjects are considered in relation to the geographical distribution of animals and plants.

These different branches are illustrated by specimens, or drawings, or both, as the case may be.

GEOLOGY AND MINERALOGY—*Professor, Wyville Thomson, LL.D.*

The Courses consist of lectures, demonstrations, and examinations. The Geological Course embraces the general principles of the science, and a detailed investigation of the palæontological, lithological, and economic characters of all the formations. The Students are exercised in the practical use of the necessary instruments, and in the construction of Geological maps and working sections. The characteristic fossils of the different formations are rendered familiar by the exhibition of specimens and models, and an excellent series of drawings. Drawings are also used for the illustration of the underground workings of mines of copper, coal, &c.

In the Mineralogical Course the Students are instructed in the most modern crystallography by models, and exercised with the reflecting goniometer. The electro-chemical classification of minerals is then explained, and an extensive

suite of minerals in the Museum is arranged on that system, for the instruction of the Students. *Appendix, No. 7.*

Once a week examinations are held, and additional explanations given of the subjects of the preceding lectures. *Digest of Subjects and Courses.*

LOGIC AND METAPHYSICS—*Professor, Rev. James M'Cosh, LL.D.*

LOGIC.

Students attend this Class four days each week during twelve weeks of the Second Session. On two of these days there are examinations on a text-book of Formal Logic, with short prelections on the said text-book, and also the oral explanation of philosophic terms, the reading of Essays by the Students, and the criticism of them by the Professor. On the other two days the Professor delivers written Lectures. This Course of Lectures is divided into two parts: FIRST, GENERAL LOGIC, or an Exposition of the Laws of Discursive Thought in general, that is, whatever be the object of thought, embracing Notions, Judgment, and Reasoning; SECONDLY, PARTICULAR LOGIC, or the Development of the Laws of Thought, as directed to particular classes of objects, comprising Demonstrative Evidence, Probable Evidence, Induction, Analogy, Teleology, and the Relation of the Organon of Bacon to that of Aristotle. The prominent topic in the second part is the Method of Induction, which is treated under the heads:—I. The Means, being generally Systematic Observation, and more particularly Analysis, Observation Proper, Experiment, Hypothesis, Explication of the Conception. II. The End, being the Discovery of Classes (as in Natural History, &c.), of Composition (as in Chemistry, &c.), or Causes (as in Natural Philosophy, &c.). III. The Canons of Classes, Composition, and Causes by which we may reach the End by the Means. The Students are required to give in a short written essay once a fortnight. At the Pass Examination, at the close, about one-half of the questions bear upon subjects discussed in the text-book, and the other half upon topics explained in the lectures.

METAPHYSICS.

This Class meets four days each week, and an hour each day, during the first two terms of the Session, and is attended by Students of the Third Year. On one of these days there is a rigid examination, with interspersed remarks by the Professor, on the second half of the Epitome of the History of Philosophy, sanctioned by the University of France (translated by Henry). In this part of the text-book there is an abstract of the doctrines of the more eminent philosophers who have flourished in this country, and on the Continent of Europe, from the time of Bacon to the present day. On another of these days there is an examination on the written lectures, together with the reading and criticism of essays; the Students being required to give in a carefully written essay every fortnight to the Professor, who reads it at home, and selects certain portions of it to be read in the class, where he criticises it. These essays are on the leading subjects discussed in the written lectures. On the other two days the Professor delivers carefully prepared written lectures. He begins the course with a few lectures on the Method of Investigation, which is that of Induction, and on Mind and Body, and then proceeds to divide his course into two parts, PSYCHOLOGY and METAPHYSICS PROPER.

Under PSYCHOLOGY he treats of the Powers or Faculties of the Mind which he classifies as follows:—I. The Simple Cognitive Faculties: (a) Perception; (b) Consciousness. II. The Reproductive Faculties: (a) Retention; (b) Phantasy; (c) Association; (d) Recognition; (e) Composition; (f) Symbolic Power. III. The Faculties which Discover Relations: (a) of Identity and Difference; (b) of Whole and Parts (to which we owe abstractions); (c) of Space; (d) of Time; (e) of Quantity; (f) of Resemblance (to which we owe the Discovery of Classes); (g) of Active Property; and (h) of Cause and Effect. IV. The Conscience. V. The Emotions; and VI. The Will. In this course of lectures, which occupies

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two-thirds of the session, the method of operation and peculiarities of these mental attributes are carefully pointed out.

Under METAPHYSICS PROPER the Professor treats of the Native or Intuitive Principles of the Mind. He points out their true Psychological Nature, and shows that they are the fundamental laws or rules of the Faculties. He also specifies the tests, such as Self-evidence, Necessity, and Universality, by which they may be distinguished. He proves that they are in the constitution of the mind, and that they operate spontaneously, but that we can make a reflective or philosophic use of them only after we have detected their nature by a careful induction. He classifies them as the True and the Morally Good. Under the first he treats (1) of Primitive Cognitions and Beliefs, such as Body, Spirit, Substance, Power, Space, Time, the Infinite; and (2) Primitive Judgment, such as Substance and Quality, Mathematical Axioms, Cause and Effect. Under the Good, without entering into the subject of Ethics, he shows that there is a fundamental distinction between Moral Good and Evil. He closes this course by showing how all these principles should conduct us to the belief in a Being who is at one and the same time the True and the Good.

HONOR LOGIC.

The Professor has also an Honor Class, in which are discussed the higher questions of Logic (Formal and Inductive) and Philosophy. It meets three times a week, and is attended by fourteen Students. At two of the hours the Professor lectures on Logic and the History of Philosophy, and at the third hour there are examinations on text-books (including logical treatises by Mansel, Thomson, and Mill), and discussions.

CIVIL ENGINEERING—*Professor, James Thomson, M.A., O.E.*

The Courses of lectures and practical instruction given by the Professor of Civil Engineering are arranged to accord with the Ordinances of the Queen's University, which prescribe to candidates for the Diploma in Civil Engineering a Curriculum extending over three Sessions usually, but admitting of abbreviation to two Sessions in the case of students whose previous acquaintance with a sufficient group of the subjects prescribed for study in the first and second Sessions of the ordinary Course shall be deemed by the College Council satisfactory.

For the First Year Students the Professor gives a course of instruction, comprising lectures and oral examinations on the Principles of Geometrical Drawing, and the performance by the students of practical work under his direction. The lectures include the principles of descriptive geometry, orthographic and isometric projection, and linear perspective; and the practical work comprises the performance of examples in these subjects, and the execution of drawings in Mechanical Engineering, and occasionally also in Architecture and Civil Engineering. The Class meets for two hours at a time on two days per week during the three Terms of the College Session.

For the Second Year Students two courses are conducted by the Professor of Engineering, of which one is a Lecture Course and the other a Practice Course. The Lecture Course comprises surveying, levelling, and plotting, with the theory and use of the instruments required in surveying and levelling operations; measurement of earthworks for railways; setting out works on the ground, including ranging of railway curves, and setting out breadths of cuttings and embankments, and ranging tunnels, &c. The Course also comprises usually some of the following subjects:—revision and farther prosecution of descriptive geometry, and perspective, and other subjects of geometrical drawing; designing and drawing of oblique bridges; properties and qualities of materials used in construction, and modes of procuring them; and an introduction to architecture as a fine art.

In the Practice Course of the Second Year the Students are engaged in the performance of office and field work, under the instruction and direction of the Professor; and the business includes surveying, levelling, drawing, mapping, and the computation of areas of lands, and other engineering calculations. Excursions are also made occasionally during the Session to visit Engineering works.

For the Third Year Students there are (as for those of the Second Year), two Courses conducted by the Professor, one a Lecture Course, and the other a Practice Course. The Lecture Course comprises the farther treatment of some of the subjects proposed to be entered on in the Second Year, and most of the following subjects:—foundations, cofferdams, bridges, tunnels, roads, and railways; specifications for engineering contracts; water-works for supplying towns; science of the flow of water in orifices, pipes, and canals; drainage of fens by gravitation, and by steam power and other mechanical means; harbours; regulation and improvement of rivers; science of the strength of materials and structures; ventilation of dwelling-houses, public buildings, and mines; the iron manufacture; processes and mechanisms used in foundries and engineering workshops.

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The Practice Course includes office work, field work, and engineering excursions.

ANATOMY AND PHYSIOLOGY—*Professor, Peter Redfern, M.D. Lond.,*
F.R.C.S.

The Department of Anatomy and Physiology comprises two distinct Courses of Lectures—one on Anatomy and Physiology, the other on Descriptive and Surgical Anatomy, and also the teaching of Anatomy by Dissections throughout the day.

The Course of Anatomy and Physiology includes about 144 meetings, each of an hour's duration, held on the first five days of each week from November to April inclusive. These meetings are for lecture and occasional examinations on the subjects previously considered in the lectures. The lectures include a complete course of the Anatomy and Physiology of the general textures of the body, including the blood, chyle, &c., and a systematic account of the whole of the viscera, treated of as they are associated in groups for the several purposes of digestion, circulation, respiration, urination, innervation, and generation; also the organs of sense. In treating of every part or organ its healthy state is shown by recent dissections and by preparations from the Museum illustrating it in man and animals, its diseased states and actions being referred to at the same time and contrasted with the healthy ones. The textures not visible to the naked eye are shown under a series of achromatic microscopes, so that during the Course every student in the class has an opportunity of judging for himself of the true characters of each part, and, by becoming familiarized with these, of recognising each when changed by disease.

The Course of Practical Anatomy and Anatomical Demonstrations includes:—

1st. Dissections carried on throughout the day under the immediate superintendence of the Professor of Anatomy and Physiology, and the Demonstrator. Each Student is required to be steadily engaged in dissections during the whole Session. For this purpose the supply of subjects is regular and abundant, and thus affords the surest foundation for efficient medical teaching.

2nd. This Course includes the Anatomical Demonstrations, which consist of a complete Course of Descriptive and Surgical Anatomy, commencing with the anatomy of the skeleton and bones, and including the anatomy of the limbs and other parts, excluding that of the viscera and the physiology treated of in the Course of Anatomy and Physiology. The demonstrations are given on each of the first five days of the week, and are about 117 in number in each Session.

PRACTICE OF MEDICINE—*Professor, James Cuming, M.D.*

The class meets four times each week, from the first week of November to the last of the following April.

An examination is held usually once a fortnight. The Course embraces the principles of Inflammation, Fevers, the diseases, organic and functional, of the viscera of the three great cavities of the human body. In treating of individual diseases, their pathology, semeiology, ætiology, and treatment, are the subjects chiefly dwelt on. Wherever it is possible, pathology is illustrated by the pre-

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THEORY AND PRACTICE OF SURGERY—*Professor, Alexander Gordon, M.D.*

Four Lectures are delivered weekly during the Medical Session. An examination is held each day on the subject of the preceding day's Lecture. Each Course comprises the following subjects:—

Inflammation,
Suppuration,
Mortification,
Erysipelas,
Burns,
Ulcers,
Wounds,
Hæmorrhage,
Diseases of the Arteries,
 Veins,
Fractures of Trunk and Extremities,
 Cranium, Injuries of the Brain and Scalp,
Dislocations,
Diseases of the Joints,
Diseases of the Bursae,
 ,, Bone, benign and malignant,
 ,, the Jaws and Mouth,
 ,, the Fingers and Toes,
 ,, Female Breast,
 ,, Anus and Rectum,
 ,, Testis,
 ,, Hernia,
 ,, Prostate,
 ,, Bladder,
 ,, Eyes,
 ,, Larynx,
Syphilis,
Gonorrhœa,
Stricture.

All the capital and minor operations are performed on the dead subject. The Professor delivers a separate Course of twenty-five Lectures on Operative Surgery.

MATERIA MEDICA—*Professor, James Seaton Reid, M.D.*

This Course includes—

- 1st. General Pharmacology, or the modes in which medicines act upon the living organism in a state of health.
- 2nd. Therapeutics, or the modes in which medicines act as curative agents.
- 3rd. Pharmacy.
- 4th. Dietetics, a review of the different kinds of food used in health and in disease.
- 5th. Special Pharmacology, or the history, composition, uses, and modes of administering medicinal agents for the cure of disease.
- The Class meets four times each week. An examination is held once every week.

MIDWIFERY—*Professor, William Burden, M.D.*

Lectures four times a week during the six winter months consist of following subjects:—

subjects :—
Anatomy of the pelvis, so much as is required for midwifery. Its measurement and pelvimeters.

Contents of the pelvis. The functions of the uterus in its virgin state.	Appendix, No. 7. Digest of Subjects and Courses.
Conception—length of gestation—changes of the uterus and its appendages during gestation.	
Growth of child from its earliest seen form until its full parasitic size.	
Graafian vesicle and corpus luteum. Fœtus, its circulation, signs of maturity, weight, and length.	
Plural births.	
Proportion of births and deaths of males to females.	
Superfetation.	
Signs of pregnancy.	
Signs of approaching labour.	
Natural labour, its progress; also the positions and progress of child till its separation from its mother.	
Management of natural labour, including the arrangement of the bed and bed-room, and the proper dress and posture of the patient.	
Tedious labour, its causes and treatment.	
Labour requiring the use of instruments; their application taught on models in the class.	
Cæsarean section and Sequitean operation—how to prevent the fœtus from getting large in uterus.	
Premature labour—how to bring it on, and when it is necessary to do so.	
Cross-births and their treatment.	
Abortion—how to prevent it.	
Extra uterine fœtations—how they occur, and their treatment.	
Management of women after delivery, and treatment of such accidents and diseases as occur at this period.	
Management of children after birth, washing, dressing, food, &c., and the choice of a wet-nurse, and treatment of such accidents as take place at this period, or soon after.	
Practical midwifery taught by pupils attending patients in their own houses and in the Lying-in hospital, where Clinical Lectures are given.	

MEDICAL JURISPRUDENCE—*Professor, Dr. Hodges.*

The Lectures in this Course are delivered twice weekly during six months. They include an account of the history and chemical investigation of poisons, and of the various subjects respecting which the evidence and assistance of Medical Practitioners may be required in Courts of Law. Experimental illustrations of the methods to be pursued in medico-legal inquiries are given, and frequent examinations held to test the progress of Students. No salary has been allocated to the Teacher of this department, and the duties, at the request of the Council, have, since the opening of the College, been performed by Dr. Hodges.

ENGLISH LAW—*Professor, Echlin Molyneux, Q.C.*

The Professor of English Law, in conducting his department, has constantly kept in view the object of the Select Committee of the House of Commons in recommending the foundation of Chairs in Law in connexion with the Queen's Colleges, which, as they stated in their Report on Legal Education, was not merely to prepare Candidates for the Bar, and for the profession of Attorney and Solicitor, but to raise the standard of legal attainments amongst local practitioners, and especially to provide opportunities of legal education to qualify persons intended to fill administrative situations not strictly legal—a policy which has been since followed up by the Legislature conferring privileges, by way of inducement, on Candidates for the profession of Attorney and Solicitor, who shall avail themselves of these Schools of Law.

The Course of the *First* year in this department comprehends the elements of real and personal property, with the principles of conveyancing; that of the *Second* consists of an introduction to the principles and practice of Courts of

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Equity and the law of Bankruptcy; the *Third* Course includes the common law as incident to contracts, the nature and form of remedies by civil action, and an outline of criminal law, theoretical and administrative, which last completes the Curriculum of instruction required for the attainment of the Diploma of Elementary Law in the Queen's University. The subjects prescribed for Students of the *Fourth* year to qualify them for the Degree of LL.B. embrace a more extended and detailed course of the subjects already enumerated, including the law of wills, powers, evidence, and procedure.

The Lectures are made auxiliary to the contemporaneous studies directed, and are accompanied by interrogation, independent of the General Examination and that for Honors. Such books, cases, and decisions, and portions of treatises are pointed out for reading as are considered by the Professor most useful in elucidating a branch of learning which is scarcely furnished with books exclusively intended for instruction; and no efforts have been spared to point out the peculiarities of the law in Ireland, whether proceeding from statutes or inherent diversity of practice, or to direct attention to the recent changes which have been introduced into the course of procedure.

From the first opening of the College to the present time the successive classes have spontaneously applied themselves with assiduity and perseverance to the various subjects of legal instruction, and several Non-Matriculated Students have from time to time availed themselves of the privilege afforded by the College Ordinances of attending detached Courses of the Lectures on selected subjects.

Under these circumstances, the Professor is gratified at being able to give the assurance that the Faculty of Law has fully realized the objects of its founders, and that a further extension of its public benefits would ensue upon the adoption by Government of the suggestion made by the same Committee of the House of Commons that a preference should be given to candidates for situations in the Civil Service, not of a purely legal nature, who could produce testimonials of legal attainments from those institutions—a rule which would fully accord with the principle laid down in a recent report of another Committee in relation to the Civil Service.

JURISPRUDENCE AND POLITICAL ECONOMY—*Professor, T. E. Cliffe Leslie, LL.B.*

The subjects embraced in the Course of Lectures on *Jurisprudence* are according to the regulations of this College, (1) the Elements of Jurisprudence, (2) Civil Law, (3) Constitutional Law, (4) Colonial and International Law.

In the treatment of these subjects both the *Historical* and *Philosophical* Methods are followed in the Lectures of the Professor. The Historical Method, for example, is applied in tracing the principal changes through which the laws of England have passed, the assignable causes of such changes, and the degree and manner in which, in comparison with the laws of Continental Europe, the laws of this kingdom have been affected by contact with the principles of Roman legislation. The method of Philosophical Analysis, on the other hand, is applied in investigating the doctrines of the foundation and classification of rights, the several parts and legitimate form of a complete code, the relation of Scientific Jurisprudence to other departments of Social Philosophy, and the means of improving the state of Positive Law as deducible from such considerations.

The subjects which a Course of Lectures on *Political Economy* must embrace are fewer and more definite than those classed under the less advanced and more complicated Science of Jurisprudence. It is the Professor's endeavour to illustrate the principles of Economic Science by the help of those practical applications which will be most interesting and useful in a large commercial town.

APPENDIX, No. 8.

GENERAL CLASS EXAMINATION at the end of the SESSION 1865-66.
FIRST YEAR STUDENTS.

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amination.

THE ENGLISH LANGUAGE—*Examiner, Professor Craik.*

[Every answer must be complete in itself, or so expressed as to be intelligible without the question.]

1. State the limits of our subject as explained at the commencement of the course, mentioning the adjacent subjects from which it was separated on each side; and give, also, the two parts into which it was divided, with the various designations by which they were distinguished.

2. State what Speech or Language properly is, and mention briefly some of the points of view in which the study of it is especially interesting.

3. Explain in what the miracle of language really consists, and also how, even with no miraculous intervention on any particular occasion, diversity of languages could not but arise.

4. Explain the full sense or meaning in which it may be affirmed that the faculty of Speech is the distinction of the human being.

5. Explain what always must happen when a race or people exchanges one language for another.

6. Give an account of the several branches of what is called the Indo-European Family of Languages.

7. Arrange according to their relationship the several known Celtic tongues and dialects; mention the ascertained facts respecting the prevalence of any of them in the British islands; and state what appears to be the amount of any Celtic element to be found in our present English, in how far it can be said to have combined with the other ingredients of which the language is composed, and in what way or ways it may be supposed to have been acquired.

8. Give an account of the connexion of the Romans with Britain from its commencement to its close, and state how much of the Latin still remaining in the language of the country appears to have been derived from that connexion.

9. Describe the amount and nature of what has been called the Latin of the Second Period to be found either in the present or in any past form of the English language.

10. Explain how the bulk of the Latin in our present English is to be accounted for.

11. Explain what we mean by saying that the English is *fundamentally* a Gothic language; and state what are the subdivisions of the Gothic branch of the Indo-European Family, and to which of them it is properly to be said to belong.

12. Give the commonly received account of the Saxons and Angles, and of their settlement in Britain.

13. Give an account of the invasions of England by the Danes.

14. State distinctly the *one insuperable* objection that there is to our calling the earliest form of the English language either *Saxon* or *Anglo-Saxon*.

15. Explain what was the first effect, and what the second, produced upon the English language by the Norman Conquest; and deduce the true scientific view of the history and revolutions of the language.

16. Give an account of the French language, and of its two great former dialects.

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amination.

17. Compare the progress of the English language as used in literature from the Norman Conquest to that of the human being from infancy to manhood, giving the succession of the several stages by centuries and by Kings' reigns.

18. State how the English, French, and Latin languages were employed in England after the Conquest in literary compositions, in charters, deeds, statutes, law-books, and proceedings in courts of justice.

19. Give what is held to be the history of the employment of the French language in England from the time of the Conquest in the instruction of boys at grammar-schools.

20. Give an account of the National (commonly called the Saxon) Chronicle.

21. Give an account of the *Brut of Layamon*, noticing the date, the character and peculiarities of the language, the part of the country in which it seems to have been written, the subject, the form of the composition, the previous works, if any, on which it appears to be founded in whole or in part, and the printed edition.

22. Give an account of the *Ormulum*, with the same particulars.

23. Give a similar account of the Chronicle of Robert of Gloucester, and of that of Robert de Brunne.

24. Give the common terminations of the following cases of the Original English (or what is commonly called the Anglo-Saxon) Noun:—The nominative singular, the genitive singular, the nominative plural, the dative plural, and the genitive plural.

25. Explain Dr. Guest's scheme of the revolutions of the language founded upon the successive changes in the terminations of nouns and verbs.

26. Explain the origin, in different cases, of our now non-syllabic final *e*.

27. Give Chaucer's forms for our modern *will, would, shall, should, can, could, may, might, I, they, them, and her*.

28. Give Dr. Guest's explanation of Chaucer's—*with his shoures sothe—perced to the rote—hire gretest othe—that brighte shone*—and the distinction pointed out by him between *brighteste* and *brightest*.

29. Mention any words or forms of expression used by Lord Clarendon that have now either become obsolete or are no longer used in the same sense.

30. Mention any changes in the mode of writing certain words which you recollect meeting with in our critical reading of the specimens at the end of the Text-book.

31. State the doctrine laid down in the class for the use of the comma with single words, whether connected or not connected by a conjunction, with substantives or verbs expressed by several words, and, in particular, with relative clauses.

32. Explain what is essential to the constitution of a sentence.

SECOND YEAR STUDENTS.

Logic—*Examiner, Professor M'Cosh.*

*1. What is the nature of the following notions, and what the reality in them:—"rationality," "rational," "man"?

*2. What is meant by the extension and what by the comprehension of a notion? Interpret the following, both as to extension and comprehension:—"Buds appear in spring."

3. What is the nature of logical definition? What are the rules to be attended to? Examine the following by these rules, and amend when necessary:—"Logic has to do with reasoning;" "Propositions are said to be opposed when they differ in quantity and quality;" "In a conditional, one proposition depends on another;" "A disjunctive consists of two or more categoricals connected by the prepositions *either* and *or*;" "A fallacy is erroneous reasoning;" "*Petitio Principii* is a begging of the question."

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amination.

4. What is meant by opposition, what by subalternation, what by contrary and contradictory opposition? Given the proposition "all men are liars," what derived judgments or immediate inferences can be drawn by opposition?

*5. "The rat not bringing forth its young by eggs is not a reptile." Put this in the form of a syllogism in the second figure, and reduce it to the first figure. Why must the conclusion in the second figure be negative?

6. Suppose some one were to maintain that the Scriptures can not be from God because they contain things which we cannot fully comprehend, how would you meet him by an argument in the third figure?

7. "There is always discontent in a country when it is ill governed, and as Ireland is discontented, we may conclude that it is ill governed." Put this in the form both of a categorical and a conditional, and say whether the reasoning is valid.

8. Some one is arguing against the utility of logic, and he shows successfully that men have reasoned well without knowing anything of logic. Of what fallacy has he been guilty? Define that fallacy. How would you meet it by an argument from analogy?

*9. Show why demonstrative evidence cannot apply to any department of physical science.

10. What is the nature of the search after classes? and what of the search after causes? what the difference of the two? and in what sciences are they respectively the end in view?

*11. Explain and illustrate what is meant by the Canon of the Method of Difference.

12. What is meant by the argument from analogy? When is the argument from analogy conclusive?

N.B.—Those seeking Honors should not answer the questions marked (*).

HONOR QUESTIONS.

(a) "The man was very clever, but at the same time very imprudent. Genius of itself will never succeed in this world without common sense; and so it is not wonderful that he failed; and men may gather lessons from his failure." Resolve the above into distinct propositions, indicating the subject and predicate, and say in what class you would place each of the notions.

(b) "Some statesmen do not study the best interests of the country; all statesmen have influence." What conclusion can be drawn? Indicate the mood and figure, and reduce to the first figure *ostensively* and by *reductio ad impossibile*, and in doing so explain and justify the processes.

(c) Prove that O cannot be a premiss in the first figure, and that it cannot be the major in the second figure, or the minor in the third.

(d) Discuss the question, whether all reasoning is induction? or whether induction implies reasoning? If induction implies reasoning, where do we get our first major?

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amination.

(e) What is meant by a "perfect induction"? What by "simple enumeration without a known exception"? Wherein precisely does Baconian induction differ from these?

(f) What canons would settle for us that "reptiles" are a natural class, and that the weight of the atmosphere is the cause of the rise of the mercury in the barometer? Enunciate the canons, and show that they apply.

(g) A comparative anatomist finds the leg of an animal in the earth, and is able to reconstruct from it the whole animal. On what principles does he proceed? Unfold the process, and put in syllogistic form whatever reasoning there may be in the process.

GEOLOGY AND MINERALOGY.—*Examiner, Professor Wyville Thomson.*

1. What is the composition of the principal Ores of Iron? Name the Geological formations, and the localities whence they are chiefly procured.
2. What is the composition of Agate, and how is it formed?
3. What is Trachyte, and under what conditions is it found?
4. State generally the composition of the doleretic lavas.
5. Contrast generally the Geological structure of the Counties of Down and Antrim.
6. What are the characteristic fossils of the lowest fossiliferous rocks in Ireland?
7. Give the divisions of the fossiliferous series in Britain, up to the Llandeilo flags. Name three fossils characteristic of each, and state the Zoological relations of these fossils.
8. Name some of the characteristic fossils of the Glacial Clays, and state the recent geographical distribution of these forms.

ZOOLOGY.—*Examiner, Professor Wyville Thomson.*

1. Describe the structure of the skull of a Mammal, pointing out the characters which specially distinguish it from that of a bird.
2. Describe the lower jaw with the teeth of a Beaver, and contrast it in form and structure with that of a Cat.
3. Describe the structure of the heart, and the course of the blood in Reptiles.
4. Give the characters of the three recent Reptilian Orders.
5. Describe the skeleton of *Draco*.
6. Describe generally the structure of the brain in one of the higher Monkeys, and in a Marsupial.
7. Give the characters of the orders, *Cyclostomi*, *Plagiostomi*, *Holocephali*, and *Holostei*, among fishes.
8. Describe the mode of origin and the functions of the Allantois.
9. Describe the changes which take place in the mammalian ovum from the period of impregnation up to the first appearance of the heart of the embryo.
10. Give some account of Owen's views as to the structure of the mammalian skull.

FIRST YEAR STUDENTS.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

REAL AND PERSONAL PROPERTY AND CONVEYANCING.

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No. 8.*

General
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amination.

1. What is a lease?
2. What is the rule in Shelley's case?
3. What was the object to be gained by adopting a deed of bargain and sale in place of assurance by feoffment?
4. What statute first rendered it necessary that a feoffment should be *in writing*? and what statute subsequently provided that every feoffment should be *by deed*?
5. What was the scope and operation of the statute of uses?
6. How is a mortgage viewed by Courts of Law and Courts of Equity respectively?
7. What interest does the widow take in the personal estate of her deceased husband under the statute of distributions?
8. What is the object of recitals in a deed? and within what limits should they be circumscribed?
9. Why is a trust to uses made the basis of every settlement?
10. By what enactments are trustees to preserve contingent remainders dispensed with? and what are the contingencies against which the statute has made provision?
11. In what respect does the right of stoppage *in transitu* differ from the right of lien when there has been a perfect contract of sale?
12. At what stage of the pedigree does the right of representation cease in reckoning the degrees of propinquity of kindred entitled to the personal estate of an intestate?
13. A woman entitled to a chose in action, marries; her husband dies, and his personal representative sues the debtor at law; is he entitled to recover? and if not, why not?
14. How does a Remainder differ from a Reversion?
15. Tenant for life, remainder in tail, remainder in fee; by what acts can the tenant in tail convert his estate tail into a fee simple?
16. Upon the death of a person intestate, seized of real estate and possessed of personal estate; what is the primary distinction in the devolution of title to them respectively?
17. Why, in *every* case of making out title land in Ireland, is it necessary to show that there is no reversion in the Crown, without reference to the distance of time at which the original grant was made from the Crown?
18. Limitation in a deed to A. B. and his heirs male; what estate is thereby created?
19. Why do the Courts construe a devise of a term of years to a man and the heirs of his body as conferring an absolute interest, although the same words, in reference to a freehold estate, would be held to create an estate tail?
20. In what respect do the *Irish* Registry Acts differ in their operation and effect from the recent *English* Registry Act?
21. A female, after the 1st January, 1834, and while of the age of two years, succeeds as heiress-at-law to an estate in fee-simple of which her ancestor died in possession; she does not enter into possession during her life; she marries under age and becomes a lunatic; if she lives until the year 1880, leaving a son of full age, at the expiration of what period will the title be barred by the statute of limitations, 3 & 4 Will. IV.?
22. What was the nature of the Irish tenure arising out from leases for

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amination?

lives renewable for ever? In what respect was that tenure inexpedient? What means for the removal of the evils attendant upon it have been provided by the "Leasehold Conversion Act," 12 & 13 Vict. c. 105? and what persons are competent to avail themselves of it?

23. What class of descendible freehold in possession belonging to the wife does not entitle the husband to an estate by the courtesy?

24. By what acts may the wife's dower be extinguished where the marriage had taken place before the 1st January, 1834? and how may such extinguishment be effected when the marriage was subsequent to that day?

25. State some one or more of the expressions in a will which would be sufficient to create an estate in fee simple which would not have that effect in a deed?

26. A. B., who succeeds to an estate in fee simple as heir-at-law to his mother, by will devises it to his only child in tail, remainder to his own right heirs. The child dies under age and without issue. What different rule would apply in ascertaining the testator's heir-at-law when the testator died before the 31st December, 1833, from that which will govern the investigation if the death had been after that day?

27. What *especial precaution* ought to be observed in framing an *appointment* under a power, so as to avoid any violation of the rule against perpetuities which would not be applicable to other forms of assurance?

28. Blackacre limited to A. B. and his heirs to receive the rents and pay them over to C. D. and his heirs, to the use of E. F. and his heirs. Whiteacre limited to X. and his heirs to permit Y. and his heirs to receive the rents to the use of Z. and his heirs. Who are the *necessary* parties to execute the deed of conveyance to a purchase of both, so as to vest in him the legal and equitable interests in each estate?

SECOND YEAR STUDENTS.

EQUITY AND BANKRUPTCY.

1. Blackacre limited to A. B. and his heirs to receive the rents and pay them over to C. D. and his heirs to the use of E. F. and his heirs; whiteacre limited to X. and his heirs to permit and suffer Y. and his heirs to receive the rents to the use of Z. and his heirs; who are the necessary parties to execute the deed of conveyance to a purchaser of both denominations, so as to vest in him the legal and equitable title in each?

2. Voluntary conveyance by A. B. to C. D.; the *latter* conveys the same lands to C. D. for valuable consideration; A. B. afterwards conveys the estate for valuable consideration to E. F.; what are the rights of the parties respectively?

3. As against what creditors of the grantor are voluntary conveyances void?

4. In what cases will a Court of Equity hold a surety discharged as against the creditor?

5. What act is necessary to secure priority to the assignee of a trust fund?

6. A. conveys his estate in mortgage to B., and afterwards pays off the debt without taking a reconveyance from B. A. subsequently mortgages the same estate to C., and afterwards sells and conveys the same estate to D., who has no notice of the mortgage to C., but D., having afterwards discovered that fact, he procures a conveyance of the legal estate from B.; what are the relative rights of C. and D., and on what principle does the title depend?

7. Upon what principle is it that *post obit* bonds made by heirs and expectants are held void in equity? Appendix,
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8. Do *all* equitable instruments in relation to land receive from Courts of Equity the strict construction which would be conformable to the maxim "*Equitas sequitur Legem*," and if not, what is the nature of the instruments which do not receive that construction, as distinguished from those which do? and what are the grounds of that distinction? General
Class Ex-
amination.
9. In what cases are conveyances to trustees for the benefit of creditors revocable?
10. In what instances is the maxim "*Equality is Equity*" applied by Courts of Equity in the distribution of assets among creditors? and in what cases is it *not* followed in administration suits?
11. What must be the nature and extent of the non-disclosure of facts which would be deemed *positive fraud* in adjudication on contracts by Courts of Equity?
12. Upon discharge of an incumbrance on the inheritance, what is the difference where the payment is made by tenant for life, or by tenant in tail, as such payment affects the rights of the person so making such payment?
13. In what respect does the order of distribution of funds in Bankruptcy among the creditors differ from that observed in the administration of the assets of deceased persons by Courts of Equity?
14. In suits for specific performance of contracts for sale of lands, what is the difference of the decrees pronounced, according as the vendor is plaintiff or defendant?
15. Within what limits are executions against bankrupts and conveyances from them defeated by the bankruptcy?
16. Why is the practice of the "Landed Estates Court" *necessarily* different from that of the Court of Chancery in proceedings for the sale of land, in respect of the former being exempt from the indispensable rule of the latter that all persons having interests in the estate shall be made privy to the suit by express notice?
17. In what respect is the relief, as administered to sureties, in reference to *contribution* by Courts of Equity, not only more complete, but, under certain circumstances, more beneficial in point of pecuniary amount than can be obtained in Courts of Law?
18. State the object of rents in Equity designated "*Quia timet*," and give instances.
19. To what extent do Courts of Equity grant relief, on the ground of *mistake*, in reference to deeds and wills respectively?

THIRD YEAR STUDENTS.

COMMON AND CRIMINAL LAW.

1. How do common carriers differ from special carriers in respect of their liabilities for loss of goods confided to them?
2. Grant of rent charge issuing out of land; the deed contains a covenant to pay the rent and to build certain houses on the land to increase the security. The grantee assigns the rent charge, and the houses not having been built, the assignee brings an action of covenant against the grantor for breach of the covenant; demurrer by the defendant. For whom will judgment be given? and why?
3. A regular sale is effected of a portion of a large quantity of corn in bulk; but before the portion is separated by the vendor the warehouse and corn is burned: who is to bear the loss?

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amination.

4. What circumstances in connexion with the contract of suretiship in *its inception* will exempt the surety from liability? And what *subsequent* acts of the assured, independent of release or waiver, will discharge the surety?

5. A horse is sold by a person who refuses to give a warranty, but represents the horse as sound; the animal turns out unsound; under what circumstances will an action lie against the vendor?

6. What circumstances will render an agent personally liable for the price of goods purchased by him at the instance of his principal?

7. What state of facts are essential to enable a person to raise a question of title to land in an action of trespass?

8. In what instances must husband and wife join as plaintiffs in an action?

9. What clause was it necessary to introduce in a lease to entitle the lessor to recover in an ejectment for non-payment of rent at *common law*? What was the peculiar difficulty of proof in such an ejectment? How have both these obstacles been removed by the Ejectment Acts?

10. What are the two modes of meeting the case of an adversary in pleading?

11. What was the object of the rules which enforced technical accuracy in pleading under the old system? and what is the practical mode substituted by the "Common Law Procedure Act" for attaining the same object?

12. What is the meaning of the expression "*damnum absque injuria*" as applicable to actions of tort?

13. What is the exception to the rule that a moral obligation does not constitute a sufficient consideration to sustain a contract?

14. What is the difference between the crime of High Treason and Treason Felony?

15. In what respect do the functions of the Grand Jury differ from those of the Petty Jury?

16. What averments are necessary in an indictment for High Treason?

17. When death ensues from accident, what additional circumstance will change the character of the homicide from misadventure to manslaughter?

18. If a lighted firework be thrown into a coach full of company, and one of them flings it out to prevent injury to those in the coach, by which a person outside is struck and injured, does any action lie at the suit of the person so injured? and if so, against whom?

CIVIL LAW AND JURISPRUDENCE.—*Examiner, Professor Leslie.*

1. State the various causes assignable for the superiority of the Romans over the Greeks in Jurisprudence, adding any comment you think proper.

2. State the different significations given to the terms Written and Unwritten Law, and point out the comparative importance, at different periods, of the distinctions denoted.

3. Compare the achievements of Edward I., as a lawgiver, with those of Justinian, citing Lord Bacon, Mr. Hallam, and Dean Milman.

4. Point out the various causes which contributed to the improvement of English Law between the reigns of Henry II. and Edward II.

5. State the principal divisions of law as they are laid down in the *Corpus Juris*, and add the different classification proposed by Mr. Austin.

6. How is the different arrangement of the contents of the Institutes and Pandects accounted for?

7. Point out the errors in the reasoning of the Roman Jurists and Blackstone, respectively, upon the authority of custom.
8. Point out the analogy and distinction between the *Responsa Prudentum* and English Case-Law.
9. Point out the analogy between the ancient mode of trial by combat in England, and early Roman Judicial Proceedings.
10. The confusion of *quasi-contracts* with *implied contracts* has much in common with a famous error in philosophy?
11. Explain and comment on the Roman action of *Cessio in Jure*.
12. How is the classification of theft among *jura in personam*, as a civil wrong, by the Roman jurists, accounted for?

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amination.

JURISPRUDENCE.—*Examiner, Professor Leslie.*

1. Explain historically the distinction between Real and Personal Property in English Law.
2. Explain historically the distinction between Law and Equity in English Law.
3. Give examples of the different notions, principles, and distinctions involved in the Jurisprudence of early and advanced society.
4. Show the connexion between social progress and changes in Law, with examples.
5. What are the advantages of Written, as compared with Unwritten Law, in the literal sense of the term?
6. What are the disadvantages of Legal Fictions and Equity respectively, as agencies of law reform?
7. Edward I. has been called "the English Justinian." Comment on this.
8. What was the connexion between the art of writing and the disuse of trial by ordeal and combat?
9. What principles, according to Bentham, should determine the number, situation, and jurisdiction of tribunals?
10. What principles should, according to Bentham, determine the number of Judges in each Court?
11. On what grounds does Hallam ascribe the origin of the English Common Law to a period subsequent to the reign of Henry's?
12. According to Austin, his own definition of Positive Law is incomplete?

POLITICAL ECONOMY.—*Examiner, Professor Leslie.*

1. Show the connexion between competition and the *equality of wages and profits* in different occupations.
2. Show the connexion between competition and the *inequality of wages and profits* in different occupations.
3. Show the connexion between competition and the effect of the cost of production of commodities on their values.
4. How is the comparative value of commodities produced in different countries determined, and why?
5. Point out, in connexion with the principle of competition, the effect of a special tax (a) on land-rent, (b) on farming profits.
6. A tax on land-rent may, however, become to some extent a tax on farming profits?
7. In what cases is the value of commodities wholly independent of their cost of production?

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amination.

8. In what cases does the cost of production of commodities fix their minimum values, but not their ordinary actual values?
9. How has the gold from the new mines affected wages and profits in different occupations?
10. Is that effect inconsistent with the doctrine of competition?
11. State the causes which determine the average rate of wages.
12. State the causes which determine the average rate of profit.

METAPHYSICS.—*Examiner, Professor M'Cosh.*

1. We see a straight stick crooked in the water ; we feel as if there were music in the organ ; and as if the shore were moving away from us when the vessel starts :—What explanation can you give of these phenomena so as to save the veracity of the senses?
2. What is meant by the Primary and what by the Secondary qualities of Matter ? Will the distinction between these enable us to solve such a problem as the following :—“Do you say that there are smell and colour in the rose ? If you do, you are contradicting the clearest doctrines of science. If you do not, then how can you say that the rose has extension and figure ?”
3. Unfold the nature of Imagination. In doing so, say whether it involves several elements, or what elements, and whether it is a separate faculty or involves a separate faculty.
- *4. Give a psychological analysis of the faculties employed in the formation of the Singular Concrete, the Abstract, and the General Notion.
5. You are told of the death of a dear friend. Unfold and analyse psychologically the emotions excited.
6. What colours are in harmony ? Give examples of harmonious colouring in the vegetable kingdom.
7. As an exercise in psychological analysis, specify the powers of mind involved in the following :—“Being in a lethargic state, I longed for something to rouse me, and concluding that music might interest me I resolved to go to the concert, where I heard a piece of Mendelssohn's, which brought up before me a number of glowing fancies. I mused on the days of my youth, and I pictured deeds of generosity and horrid cruelty which called forth my approval and indignation.”
- *8. What is the precise difference between cognition and faith (psychological) ? Enunciate the principal primitive cognitions and primitive beliefs.
9. By what senses and by what faculties do we come to form the idea of Space ?
10. In what relation do the tests of Necessity, Universality, Self-Evidence, and Catholicity, stand to each other ? You are invited to give historical notices of the use of these tests.
11. What did Berkeley deny as to Matter ? What did Hume deny as to Spirit ? How would you show that Mind and Matter are substances, and separate substances ?
12. “Priority in the sequence observed, and invariableness of antecedence in the past and future sequences, are the elements, and the only elements combined in the notion of a cause.” “It is in consequence of an original mental tendency, that in the perception of the changes of external things we believe these changes to be invariable in their order of antecedence and consequence.” These extracts enunciate the doctrines of what philosopher ? Examine them.

N.B.—Those seeking Honors should not answer the questions marked (*).

HONOR QUESTIONS.

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amination.

a. Discuss the question, whether Space and Time have an existence independent of the objects in Space and the events in Time. Give historical and critical notices of opinions.

β. Can the distinction between the Understanding and the Reason be consistently carried out? Notice the opinions of Kant and Coleridge.

METAPHYSICS.—*Examiner, Professor McCosh.*

1. Wherein precisely does the method of Bacon differ from the methods followed prior to his time, and condemned by him?

2. State and examine the arguments in behalf of the Divine existence advanced by Descartes.

*3. When was Locke's Essay published? How many Books does it contain? Give a summary of the contents of each Book.

4. What precise place does Locke allot to Reflection and to Intuition? Are the Sensational School of France entitled to be regarded as genuine followers of Locke? Wherein did they depart from him?

5. Explain accurately the views of Descartes and of Leibnitz, respectively and in contrast, as to the nature of Matter.

6. Reid's appeal is to Common Sense. Explain precisely what is meant by Common Sense.

*7. What metaphysical truths were denied by Hume? How was he met by Reid?

8. What is the distinction between Analytic and Synthetic Judgments? Who introduced the distinction? What are the principles of Identity, Contradiction, and Excluded Middle? What kind of truth do they regulate?

9. You see a man striking his brother. What faculty declares it to be evil? What makes it evil? What would be the answers given to these two questions respectively by S. Clarke? by Hutcheson? by Brown? and by Bentham?

10. What view did Brown take of consciousness? Wherein is his doctrine supposed to be defective?

11. How does M. Cousin try to effect a passage from Psychology to Ontology. Wherein do his views on this subject differ from those of Reid and Hamilton on the one hand, and those of Brown on the other?

*12. Name the most distinguished British metaphysicians of this century, excluding living men. Give the titles of their works, and indicate the department in which they have excelled.

N.B.—Those seeking Honors should not answer the questions marked (*).

HONOR QUESTIONS.

a. Wherein did Hamilton agree with and wherein did he differ from Reid?

β. State precisely Hume's doctrine of Causation. Discuss the question whether it is necessarily atheistic.

γ. Wherein do the idealism of Berkeley and the idealism of Fichte agree, and wherein do they differ?

Appendix, No. 8. ENGLISH LITERATURE.—*Examiner, Isaac Weir, B.A., Barrister-at-Law.*

General Class Examination. ** The answers to questions 2, 11, and 12, as well as to the additional questions, will be taken into account in awarding the prize offered by the Early Text Society.

1. Define Literature. Compare it with the other Fine Arts.
2. What are Chaucer's claims to be considered "the true Father of English Literature," and "the Homer of his Country?"
3. Sketch the life of Spenser or of Shakespeare or of Pope, noticing, in the order of publication, the principal works of the author you select.
4. Describe the action of the play of Julius Cæsar, and criticise the characters of Marcus Brutus and Cassius.
5. Write a short biography of Milton, and describe the genius of his poetry.
6. Give an account of the *Lycidas*.
7. What is a sonnet? Compare the sonnets of Milton with those of Shakespeare and of Wordsworth.
8. Give a critical and historical account of English blank verse.
9. There have been three great revivals in English Literature since the time of Chaucer. Trace the causes which appear to have produced them, and their permanent effects upon our Literature.
10. Relate the history of the periodical essay and of the novel.
11. Give an account of the *Ancient Riddle*.
12. Sketch the history of the Rhythmical Romance.

ADDITIONAL QUESTIONS.

FOR THE PRIZE OFFERED BY THE EARLY TEXT SOCIETY.

1. Sketch the principal personages in the Prologue to the *Canterbury Tales*.
2. Write a philological commentary on the following passage from the Prologue:—

"With him ther rode a gentil Pardonere
Of Rouncevall, his frend and his compere,
That streit was comen from the Court of Rome.
Ful loude he sang, Come hither, love, to me.
This sompnour bare to him a stiff burdoun,
Was never trompe of half so gret a soun.
This pardoner had here as yelwe as wax,
But smoth it heng, as doth a strike of flax:
By unces heng his lokkes that he hadde,
And therwith he his shulders overspradde,
Full thinne it lay, by culpons on and on,
But hode, for jolite, he wered he non,
For it was trussed up in his wallet.
Him thought he rode al of the newe get,
Dishevele, sauf his cappe, he rode all bare.
Swiche glaring eyen hadde he, as an hare.
A vernicle hadde he sewed upon his cappe.
His wallet lay beforne him in his lappe
Bret-ful of pardon come from Rome al hote."

3. Give a short account of Francis Thynne's *Animadversions*.

HONOR LOGIC.—*Examiner, Professor M'Cosh.*

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amination.

1. Name distinguished Nominalists in mediæval and in later times. Bring out what truth is in their system, and show what oversights they are guilty of.

2. "Study is profitable." "The crocodile is a reptile." "Ethics is the science of the laws of our moral nature." "Man is endowed with the capacity of laughter." To what Predicable Classes would the above be respectively referred by Aristotle? What difficulty is there in carrying out and applying Aristotle's Predicables? To what Predicable Classes would the above be referred by Thomson?

*3. What is Logical Definition according to Thomson? What are the rules? Examine the following by these rules:—"Definition explains the nature of a thing." "The Disjunctive Judgment expresses the relation of two or more judgments which cannot be true together." "A cause is that which produces an effect." "Lying is a sin." "The Judicial Power is not the Legislative Power."

4. "Birds fly." What immediate inferences may be drawn from this proposition by the contemplation of the Extension of the notion?

5. What is meant by the Quantification of the Predicate? What effect has the thorough Quantification of the Predicate upon the analytic of Judgment and Reasoning? Give reasons for and against it.

6. "The connexion of soul and body cannot be comprehended. The connexion of soul and body is to be believed." What conclusion can be drawn? Indicate the mood and figure. Put the reasoning in the form of Comprehension indicating the minor, middle, and major term. Discuss the question whether the reasoning in such a case is spontaneously in Extension or Comprehension.

7. "The Examinations for the Scholarships in Arts take place solely in October, and so you cannot compete for a Scholarship (as you propose) in March." Put this in proper form, conditional and categorical, and indicate the Mood. Explain the nature of Conditional Syllogisms.

8. What is the nature of Disjunctive Reasoning? What is the regulating principle? the *Dictum*, or what else? Put the following in proper form, and reduce to the conditional and categorical form—"The previous Examination in Arts takes place either in October or in April, and so you cannot be examined (as you wish) in June."

9. Show that both Definitions and Axioms are needed in Mathematical Demonstration. Show what is the nature of each, and what purposes are served by each.

10. Show that all physical causes are dual or plural. Show also that all effects are dual or plural. What is meant in such a connexion by "occasions," "circumstances," "conditions," "incidents."

11. What does Mr. Mill mean by Heteropathic Laws? Give illustrations. But does association of ideas furnish examples of such laws?

12. Explain exactly the nature of the Method of Residues. Give examples of the employment of it in common life and in science. Show that it is most fertile in unexpected results, and that it is of great potency in the present advanced stage of science. But what is necessary in order to the rigorous certainty of its application?

*13. What are the elements involved in the joint inductive and deductive method? Give examples of its successful application, and, in doing so, explain what is meant by verification of inductions.

14. What is truth? Is a philosophic criterion of truth possible? But what criteria may there be of various kinds of truth?

N.B.—Those seeking Honors should not answer the questions marked (*).

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amination.

HONOR QUESTIONS.

α. If we make abstracts a separate class of notions, and distinguish between them and precepts and concepts, what effect has this upon the doctrine of the extension and comprehension of the notion, and upon the analytic of judgment and reasoning?

β. What is implied in the uniformity of nature? How does it differ from the law of cause and effect? Shew what mistakes have arisen from confounding these two.

1. What is meant by the introspective and psychological methods? What precise place has consciousness in the settlement of metaphysical truth?

2. "Reid's account of the Platonic theory of perception is utterly wrong."

3. What is Arnauld's theory of perception? What discussion has there been about it among the Scottish metaphysicians?

4. How does Hamilton classify the theories of perception? What is the theory of hypothetical realism and cosmothetic idealism?

5. What various senses or affections are included under the general head of touch or feeling? Carefully distinguish between them. Specify the physiological processes involved, and unfold the original perceptions obtained from each.

6. What are our original perceptions by the sense of sight? Give proofs with your answer. What is Berkeley's theory of vision? What Hamilton's criticism? What truth is there in the Berkeleyan theory?

7. Is substance a support, a substratum, or what? Give critical notices of the account of substance by Locke, by Berkeley, and by Mill.

8. How does Hamilton classify the laws of the association of ideas?

9. State and explain the law of inseparable association. Examine the validity of the applications that have been made of it, and also the doctrine that association can give us new ideas.

10. "There is a world in which, whenever two pairs of things are either placed in proximity, or are contemplated together, a fifth thing is immediately created and brought within the contemplation of the mind engaged in putting two and two together. In such a world surely two and two would make five." In what way would you meet this?

11. What account does Hamilton give of the faculty of relations, and of the relations discovered by it? You may offer comments.

12. "That the conceivable lies always between two inconceivable extremes, is illustrated by every relation of thought." What illustration of it is taken from our idea of space and infinity? Examine the statement.

13. Give a classification of the theories of causation. State and examine Hamilton's theory.

14. State and examine that form of the doctrine of the relativity of knowledge called *Homo Mensura*.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

[Note.—1st Year Students are required to answer questions 1, 2, 3, 4; 2nd Year, 1, 4, 5, 6; and 3rd and 4th Year, 1, 4, 5, 6, 7.]

1. Describe the muscular layers of the coats of the stomach and intestines; the position of these layers; the arrangement of their fibres; and the relative thickness of the layers of different parts.

2. What circumstances indicate that nervous tissue is continually undergoing changes during its nutrition and action.
3. Describe the varieties of natural decay or degeneration of the human tissues, which occur as life advances, and give illustrations of each.
4. For what purposes is aliment required by plants and by animals respectively? Give illustrations to show to what extent plants and animals, and individual parts of them, are influenced by aliment of different kinds.
5. What differences are there in the extent to which volitional control can be exercised over the muscles of the human body generally, or those of particular parts: 1st, at different periods of life; 2nd, in different persons; and 3rd, in the same person under different conditions of health and disease.
6. How much solid matter would a healthy adult man excrete in twenty-four hours, by the kidneys? How much of each of the following salts would there be in twenty-four hours:—Urea, uric acid, hippuric acid, chloride of sodium? To what extent can each of these salts be influenced in amount, by diet and by exercise respectively?
7. What proportions of red corpuscles, fibrin, albumen, and saline matter occur in human blood? What functions do you believe each of these substances discharges in the economy, and state your reasons?

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aminations.

PRACTICAL ANATOMY.—*Examiner, Dr. Redfern.*

[Note.—In addition to making a dissection during a separate period of three hours, 1st Year Students are required to answer questions 1, 2, 3, 4; 2nd Year, 2, 3, 5, 7; and 3rd and 4th Year, 3, 5, 6, 7.]

1. Describe the internal surface of the fibula, and mention the parts which are attached to it, and the extent and position of each attachment.
2. Describe the ligaments which attach the scaphoid bone of the foot to other bones.
3. State separately each action of the biceps flexor cubiti, and of the sartorius muscles, and what it is in the position of each muscle, the nature of its attachments, its direction, or relation to the joints, which enables it to perform each action.
4. State with care the relations of the psoas magnus muscle.
5. Describe the steps of a dissection which will expose the parts covered by the extensor brevis digitorum muscle, mentioning each part as it appears in the process of the dissection, and at its completion.
6. Give a short account of the course of each of the branches of the external carotid artery, mentioning the most important relations of each, but omitting their branches.
7. Describe the pharyngeal and superior laryngeal branches of the vagus nerve.

THEORY AND PRACTICE OF MEDICINE.—*Examiner, Dr. Cuming.*

1. Describe the evolution of the eruption in modified discrete, and confluent variola.
2. Give the characters by which scarlatina may be distinguished from diphtheria, and mention the principal points of resemblance between the two diseases.
3. Enumerate the chief varieties of cerebral complication in typhus, and sketch the treatment of each.

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aminations.

4. What are the physical signs observed in a case of acute pericarditis?
 5. What pathological changes occur in the lung in the course of acute pneumonia? Give the indications of treatment.
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MATERIA MEDICA.—*Examiner, Dr. Reid.*

1. How are medicines which act chemically classified?
 2. Write a prescription for a patient to whom you wish to administer an aperient, and at the same time render his urine alkaline.
 3. What effects on the "reactions" of the urine has a course of warm baths?
 4. Write a prescription which will combine acid and astringent properties.
 5. How are vegetable tonics classified?
 6. What ingredient gives to each class its peculiar properties?
 7. What vegetable tonic infusion can you prescribe mineral tonics in, without their being decomposed?
 8. Write prescriptions for the administration of the Potasii Iodidum; Ferri et Ammoniae Citras; and Hydrargyrum Corrosivum Sublimatum, in this infusion; and state the properties each medicine would possess.
 9. What vegetable astringent contains the largest proportion of Tannic Acid, and state the per-centago?
 10. Name the medicines on the table, and classify them therapeutically?
-

SURGERY.—*Examiner, Dr. Gordon.*

1. Describe the anatomical structure, external characters, and differential diagnosis of the cartilaginous tumor.
 2. Describe the various forms of fracture of the leg, and the position best adapted for the treatment of each.
 3. Describe the operation of, and the precautions to be observed in, catheterisation in cases of prostatic enlargement and stricture of the urethra, mentioning the different operations for the relief of the latter.
 4. Describe the changes induced in the urinary organs by disease, which impedes the free escape of the urine.
-

MEDICAL JURISPRUDENCE.—*Examiner, Dr. Hodges.*

1. State the methods to be adopted for the detection of Phosphorus in the contents of the stomach.
2. Give a statement of the results of M. Claude Bernard's experiments on the action of the Woorari Poison, as described in the lectures.
3. Mention the quantities in which the following poisons may produce death:—Opium, Muriate of Morphia, Strychnine, Hydrocyanic Acid, Corrosive Sublimate.
4. What are the symptoms of Trichiniasis?
5. What are the appearances observed in death from starvation?
6. Describe the method of employing "the Hydrostatic Test" in cases of supposed infanticide.
7. Describe the treatment to be adopted in cases of poisoning by Opium or the preparations of Morphine.

FIRST YEAR STUDENTS.

Appendix,
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GREEK.—*Examiner, Professor Mac Douall.*

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aminations.

Translate perspicuously these lines from the XIXth Book of the *Iliad*:—

“ὦ φίλοι ρωες Δαναοί, θεράποντες” Ἀρης !
ἔσταότος μὲν καλὸν ἀκούμεν οὐδὲ ἔοικεν
ὑββάλλειν· χαλεπὸν γὰρ ἐπισταμένῳ περ εὔντι.
ἀνδρῶν δ’ ἐν πολλῷ ὁμάδῳ πῶς κέν τις ἀκούσαι
ἢ ἔιποι ; βλάβεται δὲ λιγύς περ ἐὼν ἀφορητής.
Πηλεΐδῃ μὲν ἔϋων ἐνδείξομαι· αὐτὰρ οἱ ἄλλοι
σύνθεσθ’ Ἀρτεΐοι μῦθόν τ’ εὔ γινώτε ἕκαστος.
πολλάκι δὴ μοι τοῦτον Ἀχαιοὶ μῦθον ἔειπον,
καὶ τέ με νεικέεσκον· ἔϋω δ’ οὐκ αἴτιος εἰμί,
ἀλλὰ Ζεὺς καὶ Μοῖρα καὶ ἡεροφοῖτις Ἐρινύς,
οἳ τέ μοι εἰν ἀφορῇ φεσὶν ἐμβαλον ἄβριον ἄτην
ἡματι τῷ ὅτ’ Ἀχιλλῆος γέρας αὐτὸς ἀπηύρων.
ἀλλὰ τί κεν ῥέξαιμι ; θεὸς διὰ πάντα τελευτᾷ.
πρέσβα Διὸς θυγάτηρ Ἄτη, ἢ πάντας ἀῖται,
οὐλομένη· τῇ μὲν θ’ ἱπалоὶ πόδες· οὐ γὰρ ἐπ’ οὔδει
πίλναται, ἀλλ’ ἄρα ἢ γε κατ’ ἀνδρῶν κράατα βαίνει.
καὶ γὰρ δὴ νῦν ποτε Ζῆν’ ἄσατο, τὸν περ ἄριστον
ἀνδρῶν ἠδὲ θεῶν φάσ’ ἔμμεναι· ἀλλ’ ἄρα καὶ τὸν
Ἥρη θῆλυς ἐοῦσα δολοφροσύνης ἀπάτησεν
ἡματι τῷ ὅτ’ ἔμελλε βίην Ἱρακλῆειν
Ἀλκμήνῃ τέξεσθαι ἐυστεφάνῳ ἐνὶ Θήβῃ.
ἦ τοι ὅ γ’ εὐχόμενος μετέφη πάντεσσι θεοῖσιν·
ἔκλυτέ μεν, πάντες τε θεοὶ πῦσαι τε θέαιναι !
ὥς εἶπω τά με θυμὸς ἐνὶ στήθεσσι ἀνώγει.
σήμερον ἄνδρα φώωσδε μοῖστος Ἐιλείθνια
ἐμφανεῖ ὅς πάντεσσι περικτιόνεσσι ἀνάξει,
τῶν ἀνδρῶν γενεῆς οἳ θ’ αἵματος ἐξ ἐμεῦ εἰσίν·
τὸν δὲ δολοφρονέουσα προσηύδα πότνια Ἥρη·
ἦ ψεύστης εἰς, οὐδ’ αὖτε τέλος μύθῳ ἐπιθήσεις.
εἰ δ’, ἄγε νῦν μοι ὅμοσον, Ὀλύμπιε ! καρτερὸν ὕρκον,
ἦ μὴν τὸν πάντεσσι περικτιόνεσσι ἀνάξειν,
ὅς κεν ἐπ’ ἡματι τῷδε πέσῃ μετὰ ποσσὶ γυναικός,
τῶν ἀνδρῶν γενεῆς οἳ θ’ αἵματος ἐκ σέθεν εἰσίν·
ὥς ἔφατο· Ζεὺς δ’ οὔ τι δολοφροσύνην ἐνόησεν,
ἀλλ’ ὅμοσεν μέλαν ὕρκον, ἔπειτα δὲ πολλὸν ἀάσθη.”

Brief notes should be annexed ; and Candidates for Honors will give more attention to criticism than to elucidation.

SECOND YEAR STUDENTS.

Translate perspicuously these lines from the Vth Book of the *Odyssey*:—

καὶ τότε ἔπειτ’ ἄνεμος μὲν ἐπαύσατο ἠδὲ γαλήνη
ἔπλετο νηνεμία, ὃ δ’ ἄρα σχεδὸν εἰσίδε γαῖαν

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aminations.

ὅξ' ἄν μάλα προιδὼν μεγάλου ἐπὶ κύματος ἄρθεις.

* * * *

νῆχε δ' ἐπειγόμενος ποσὶν ἠπείρου ἐπιβῆναι.
ἀλλ', ὅτε τόσσον ἀπὴν ὕσσον τε γέγωνε βοήσας,
καὶ δὴ δοῦπον ἄκουσε ποτὶ σπιλίδεσσι θαλάσσης,
(ρόχθει γὰρ μέγα κῦμα ποτὶ σκερὸν ἠπείροιο
δεινὸν ἐρευγόμενον, εἴλυτο δὲ πάνθ' ἄλως ἄχνη·
οὐ γὰρ ἔσαν λιμένες νηῶν ὄχοι οὐδ' ἐπιωγαί,
ἀλλ' ἄκται προβλήτες ἔσαν σπιλάδες τε πάγοι τε)
καὶ τότε Ὀδυσσεύς λῦτο γούνατα καὶ φίλον ἦτορ.
ὀχθήσας δ' ἄρα εἶπεν ἐὼν μεγαλήτορα θυμόν·
“ὦ μοι, ἐπεὶ δὴ γαῖαν ἀελπέα δῶκε ἰδέσθαι
Ζεὺς καὶ δὴ τόδε λαῖτμα διατμήξας ἐτέλεσσα,
ἐκβασίς οὐ πη φαίνεθ' ἄλως πολιῦο θύραζε.
ἐκτοσθεν μὲν γὰρ πάγοι ὀξέες, ἀμφὶ δὲ κῦμα
βέβρυχεν ῥόθιον, λισσὴ δ' ἀναδέδρομε πέτρη,
ἀγχιβυθὴς δὲ θάλασσα, καὶ οὐ πως ἔστι πόδεςσιν
στήμεναι ἀμφοτέροισι καὶ ἐκφυγέειν κακότητα.
μή πώς μ' ἐκβαίνοντα βιάλη λίθακι ποτὶ πέτρη
κῦμα μέγ' ἀρπάξαν· μελέη δέ μοι ἔσσεται ὀρμή.
εἰ δέ κ' ἔτι προτέρω παρανήξομαι, ἦν που ἐφεύρω
ἠϊόνας τε παραπλῆγας λιμένας τε θαλάσσης,
δεῖδω μή μ' ἐξαῦτις ἀναρπάξασα θύελλα
πόντον ἐπ' ἰχθυόεντα φέρη βαρέα στενάχοντα.
οἶδα γὰρ ὥς μοι ὁδῶδυσται κλυτὸς Εἰνοσίγαιος.”

εἶος δ' ταῦθ' ὥρμαινε κατὰ φρένα καὶ κατὰ θυμόν,
τόφρα δέ μιν μέγα κῦμα φέρεν τρηχεῖαν ἐπ' ἁκτὴν.
ἀμφοτέρησι δὲ χερσὶν ἐπεσσύμενος λάβε πέτρης,
τῆς ἔχετο στενάχων, εἴως μέγα κῦμα παρῆλθεν.
ὥς δ' ὅτε πουλύποδος θαλάμης ἐξελκομένοιο
πρὸς κοτυληδονόφιν πυκινὰ λείγγες ἔχονται,
ὡς τοῦ πρὸς πέτρησι θρασειῶν ἀπὸ χειρῶν
ἐνθα κ' ἀπὸ ῥινὸς δρύφθη σὺν δ' ὅστέ' ἀράχθη.
εἰ δὲ καὶ ὥς ὑπάλυξε, παλιρρόθιον κέ μιν αὖτις
κῦμα μέγ' ἐπληξεν τηλοῦ δέ κεν ἔμβαλε πόντῳ.
ἐνθα κε δὴ δύστηνος ὑπὲρ μόρον ὦλετ' Ὀδυσσεύς,
εἰ μὴ ἐπιφροσύνην δῶκε γλαυκῶπις Ἀθήνη.
κύμαθ' δ' γ' ἐξυποδύς, τά τ' ἐρεύγεται ἠπειρόνδε,
νῆχε παρὲς ἐς γαῖαν ὁρώμενος, εἰ που ἐφεύροι
ἠϊόνας τε παραπλῆγας λιμένας τε θαλάσσης.
ἀλλ', ὅτε δὴ ποταμοῖο κατὰ στόμα καλλιρόοιο
ἴξε νέων, τῇ δὴ οἱ εἴσατο χῶρος ἄριστος
λεῖος πετράων, καὶ ἐπὶ σκέπας ἦν ἀνέμοιο.
ἔγνω δὲ προρέοντα, καὶ εὗξατο δὴν κατὰ θυμόν.

Candidates for Honors will subjoin critical and illustrative notes, discussing any incongruities, and remedying any offences against Homeric phraseology and metre, which the ordinary text may present.

THIRD AND FOURTH YEAR STUDENTS.

Appendix,
No. 8.

General
Class Ex-
aminations.

I.—Translate perspicuously this passage from the *Politeia* of PLATON:—

“Οἶμαι δέ γ’,” ἦν δ’ ἐγώ, “καὶ ἡ τούτων πάντων ὧν διεληλύθαμεν μέθοδος εἴαν μὲν ἐπὶ τὴν ἀλλήλων κοινωνίαν ἀφίκηται καὶ ζυγγένειαν, καὶ ξυλλογισθῇ ταῦτα ἢ ἐστὶν ἀλλήλοις οἰκεῖα, φέρειν τι αὐτῶν εἰς ἃ βουλόμεθα τὴν πραγματείαν καὶ οὐκ ἀνόνητα πονεῖσθαι, εἰ δὲ μή, ἀνόνητα.” “καὶ ἐγώ,” ἔφη, “οὕτω μαντεύομαι· ἀλλὰ πάμπλου ἔργον λέγεις, ὦ Σώκρατες.” “τοῦ προοιμίον,” ἦν δ’ ἐγώ, “ἢ τίνος λέγεις; ἢ οὐκ ἴσμεν ὅτι πάντα ταῦτα προοίμιά ἐστιν αὐτοῦ τοῦ νόμου ὃν δεῖ μαθεῖν; οὐ γάρ που δοκοῦσί γέ σοι οἱ ταῦτα δεινοὶ διαλεκτικοὶ εἶναι.” “οὐ μὰ τὸν Δία,” ἔφη, “εἰ μὴ μάλα γέ τινες ὀλίγοι ὧν ἐγὼ ἐντετύχηκα.” “ἀλλ’ ἦ,” εἶπον, οἱ μὴ δυνατοὶ ὄντες δοῦναι τε καὶ ἀποδέξασθαι λόγον εἴσεσθαι ποτέ τι ὧν φαμέν δεῖν εἰδέναι;” “οὐδ’ αὖ,” ἔφη, “τοῦτό γε.” “οὐκοῦν,” εἶπον, “ὦ Γλαῦκων, οὗτος ἦδη αὐτός ἐστιν ὁ νόμος ὃν τὸ διαλέγεσθαι περαίνει; ὃν καὶ ὄντα νοητὸν μιμοῖτ’ ἂν ἡ τῆς ὕψεως δύναμις, ἣν ἐλέγομεν πρὸς αὐτὰ ἡδὴ τὰ ζῶα ἐπιχειρεῖν ἀποβλέπειν καὶ πρὸς αὐτὰ τὰ ἄστρα καὶ τελευταῖον δὴ πρὸς αὐτὸν τὸν ἥλιον. οὕτω, καὶ ὅταν τις τῷ διαλέγεσθαι ἐπιχειρῇ ἄνευ πασῶν τῶν αἰσθήσεων διὰ τοῦ λόγου ἐπ’ αὐτὸ ὃ ἐστὶν ἕκαστον ὁρμῶν, καὶ μὴ ἀποστῇ πρὶν ἂν αὐτὸ ὃ ἐστὶν ἀγαθὸν αὐτῇ νοήσῃ λάβῃ, ἐπ’ αὐτῷ γίγνεται τῷ τοῦ νοητοῦ τέλει, ὥς περ ἐκεῖνος τότε ἐπὶ τῷ τοῦ ὄρα τοῦ.” “παντάπασι μὲν οὖν,” ἔφη. “τί οὖν; οὐ διαλεκτικὴν ταύτην τὴν πορείαν καλεῖς;” “τί μήν;” “ἡ δέ γε,” ἦν δ’ ἐγώ, “λύσις τε ἀπὸ τῶν δεσμῶν καὶ μεταστροφή ἀπὸ τῶν σκιῶν ἐπὶ τὰ εἰδῶλα καὶ τὸ φῶς καὶ ἐκ τοῦ καταγείου εἰς τὸν ἥλιον ἐπάνοδος, καὶ ἐκεῖ πρὸς μὲν τὰ ζῷα τε καὶ φυτὰ καὶ τὸ τοῦ ἡλίου φῶς ἔτ’ ἀδυναμία βλέπειν, πρὸς δὲ τὰ ἐν ὕδασι φαντάσματα θεῖα, ἐνταῦθα δὴ τὴν πρὸς φαντάσματα θεῖα καὶ σκιᾶς τῶν ὄντων ἀλλ’ οὐκ εἰδῶλων καὶ δι’ ἑτέρου φωτὸς ὥς πρὸς ἕτερον ἥλιον θεῖαν ἀπεικάζει. πᾶσα γὰρ αὕτη ἡ πραγματεία τῶν τεχνῶν ἅς διήλθομεν ταύτην ἔχει τὴν δύναμιν καὶ ἐπαναγωγὴν τοῦ βελτίστου ἐν ψυχῇ πρὸς τὴν τοῦ ἀρίστου ἐν τοῖς οὖσι θεῖαν, ὥς περ τότε τοῦ σαφεστάτου ἐν σώματι πρὸς τὴν τοῦ φανοτάτου ἐν τῷ σωματευιδεῖ τε καὶ ὁρατῷ τόπῳ.” “ἐγὼ μὲν,” ἔφη, “ἀποδέχομαι οὕτω. καὶ τοι παντάπασί γέ μοι δοκεῖ χαλεπὰ μὲν ἀποδέχεσθαι εἶναι, ἄλλον δ’ αὖ τρόπον χαλεπὰ μὴ ἀποδέχεσθαι. ὅμως δέ—οὐ γὰρ ἐν τῷ νῦν παρόντι μόνον ἀκουστέα, ἀλλὰ καὶ αὖθις πολλάκις ἐπανιτέον—ταῦτα θέντες ἔχειν ὥς νῦν λέγεται, ἐπ’ αὐτὸν δὴ τὸν νόμον ἴωμεν, καὶ διέλθωμεν οὕτως ὥς περ τὸ προοίμιον διήλθομεν. λέγε οὖν τίς ὁ τρόπος τῆς τοῦ διαλέγεσθαι ἐννάμεως, καὶ κατὰ ποῖα δὴ εἴδη διέστηκε, καὶ τίνες αὖ ὁδοί. αὗται γὰρ ἂν ἦδη, ὥς ἔοικεν, αἱ πρὸς αὐτὸ ἄγουσαι εἶεν, οἳ ἀφικομένῳ ὥς περ ὕδου ἀνάπαυλα ἂν εἴη καὶ τέλος τῆς πορείας.

If you anywhere follow a different reading, indicate it as nearly as you can remember.

II.—Sketch and briefly criticise the course of the discussion which occupies the VIIth Book.

Appendix,
No. 8.

FIRST YEAR STUDENTS.

General
Class Ex-
aminations.

LATIN.—*Examiner, Professor Nesbitt.*

1. Since life without friends is full of snares and anxiety, reason itself warns us to make friendships.
2. We must turn aside from the way, provided only that very serious disgrace do not follow.
3. We made peace with them when conquered; we afterwards considered them as allies, when they were hard pressed by the African war.
4. When the battle had lasted a long time, and when our men were being hard pressed by numbers, all their missiles being spent, they charge the cohorts.
5. They thought that nothing should be done rashly: they showed that aid would come from Caesar. What, they asked in the last place, was more disgraceful than to deliberate on the most important matters at the instigation of the enemy?

As soon as the approach of the troops was announced, Caesar went out to meet them, and ascended his tribunal, which had been erected in a plain before the gates of the city. After distinguishing the soldiers who by their rank or merit deserved a particular attention, Julian addressed himself in a studied oration to the surrounding multitude. He celebrated their exploits with grateful applause, encouraged them to accept with alacrity the honour of serving under a powerful and liberal monarch, and admonished them that the commands of Augustus required an instant and cheerful obedience. The soldiers, who were apprehensive of offending their general by an indecent clamour, or of belying their sentiments by false and venal acclamations, maintained an obstinate silence, and after a short pause were dismissed to their quarters. The principal officers were entertained by Caesar, who professed in the warmest language of friendship his desire and his inability to reward, according to their deserts, the brave companions of his victories. They retired from the feast full of grief and perplexity, and lamented the hardship of their fate, which tore them from their beloved general and their native country.

Translate, and add brief notes where a word, a construction, or an allusion may seem to require it:

Me vero primum dulces ante omnia Musae,
Quarum sacra fero ingenti percussus amore,
Accipiant, coelique vias et sidera monstrent,
Defectus solis varios lunaeque labores,
Unde tremor terris, qua vi maria alta tumescant
Obiicibus ruptis rursusque in se ipsa residant,
Quid tantum Oceano properent se tingere soles
Hiberni, vel quae tardis mora noctibus obstet.
Sin, has ne possim naturae accedere partes,
Frigidus obstiterit circum praecordia sanguis;
Rura mihi et rigui placeant in vallibus amnes,
Flumina amem silvasque inglorius. O, ubi campi
Spercheosque, et virginibus bacchata Laconis
Taygeta! o, qui me gelidis in vallibus Haemi
Sistat, et ingenti ramorum protegat umbra!
Felix, qui potuit rerum cognoscere causas,

Atque metus omnes et inexorabile fatum
Subiecit pedibus strepitumque Acherontis avari !
Fortunatus et ille, deos qui novit agrestes,
Panaque Silvanumque senem Nymphasque sorores !
Illum non populi fascēs, non purpura regnum
Flexit et infidos agitans discordia fratres,
Aut coniurato descendens Dacus ab Istro,
Non res Romanae perituraque regna ; neque ille
Aut doluit miserans inopem, aut invidit habenti.
Quos rami fructus, quos ipsa volentia rura
Sponte tulere sua, carpsit ; nec ferrea iura
Insanumque forum aut populi tabularia vidit.

VIRGIL, *Georgics*, ii., 475—502.

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No. 8.
General
Class Ex-
aminations.

Visne salutarī sicut Seianus ? habere
Tantumdem atque illi sellas donare curules,
Illum exercitibus praeponere ? tutor haberi
Principis angusta Caprearum in rupe sedentis
Cum grege Chaldaeo ? vis certe pila, cohortes,
Egregios equites et castra domestica ? quidni
Haec cupias ? et qui nolunt occidere quemquam
Posse volunt. Sed quae praeclara et prospera tantum
Ut rebus laetis par sit mensura malorum ?
Huius qui trahitur praetextam sumere mavis,
An Fidenarum Gabiorumque esse protestas
Et de mensura ius dicere, vasa minora
Frangere pannosus vacuis aedilis Ulubris ?
Ergo quid optandum foret, ignorasse fateris
Seianum ; nam qui nimios optabat honores
Et nimias poscebat opes, numerosa parabat
Excelsae turris tabulata, unde altior esset
Casus et impulsae praeceps immane ruinae.
Quid Crassos, quid Pompeios evertit ? et illum
Ad sua qui domitos deduxit flagra Quirites ?
Summus nemp̄ locus nulla non arte petitus,
Magnaue numinibus vota exaudita malignis.

JUVENAL, x., 90—111.

- (a) Give a brief sketch of the history of Roman satire.
(b) What is the sole authority for Juvenal's birth-place ? Mention the few facts which tradition has preserved respecting his life.

(c) "Stupet hoc qui jam post terga reliquit
Sexaginta annos, Fonteio consule natus."

What inference has been deduced from this passage as to the time in which the Satire in which it occurs was composed ?

Translate into Latin elegiacs :

The smiling Spring comes in rejoicing,
And surly Winter grimly flies :
Now crystal clear are the falling waters,
And bonnie blue are the sunny skies ;
Fresh o'er the mountains breaks out the morning,
The evening gilds the ocean's swell ;
All creatures joy in the sun's returning,
And I rejoice in my bonnie Bell.

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General
Class Ex-
aminations.

The flow'ry Spring leads sunny Summer,
And yellow Autumn presses near,
Then in his turn comes gloomy Winter,
Till smiling Spring again appear,
Thus seasons dancing, life advancing,
Old time and nature their changes tell,
But never ranging, still unchanging,
I adore my bonnie Bell.

Translate two of the following passages:—

1. Hoc primum cum Hannibale proelium fuit, quo facile apparuit et equitatu meliorem Pœnum esse, et ob id campos patentis, quales sunt inter Padum Alpesque, bello gerendo Romanis aptos non esse. itaque proxima nocte iussis militibus vasa silentio colligere castra ab Ticino mota festinatumque ad Padum est, ut ratibus, quibus iunxerat flumen, nondum resolutis sine tumultu atque insectatione hostis copias traiceret. prius Placentiam pervenere quam satis sciret Hannibal ab Ticino profectos: tamen ad sexcentos moratorum in citeriore ripa Padi sequiteratorem solventes cepit. transire pontem non potuit, ut extrema resoluta erant, tota rate in secundam aquam labente. Coelius auctor est Magonem cum equitatu et Hispanis peditibus flumen extemplo transnasse, ipsum Hannibalem per superiora Padi vada exercitum traduxisse elephantis in ordinem ad sustinendum impetum fluminis oppositis. ea peritis annis eius vix fidem fecerint, nam neque equites armis equisque salvam tantam vim fluminis superasse veri simile est, ut iam Hispanos omnes inflati travexerint utres; et multorum dierum circuitu Padi vada petenda fuerint, qua exercitus gravis impedimentis traduci posset. potiores apud me auctores sunt, qui biduo vix locum rate iungendo flumini inventum tradunt; ea cum Magone equites Hispanorum expeditos præmissos. dum Hannibal, circa flumen legationibus Gallorum audiendis moratus, traiecit gravius peditum agmen, interim Mago equitesque ab transitu fluminis diei unius itinere Placentiam ad hostes contendunt. Hannibal paucis post diebus sex milia a Placentia castra communivit, et postero die in conspectu hostium acie directa potestatem pugnae fecit.—LIVY, xxi., 47.

(a) Describe the battle of the Ticinus.

(b) Who was the Coelius here referred to? When did he live and what was the title of his work?

(c) Describe the distribution of the Gallic tribes in the North of Italy.

(d) Explain the use of the subjunctive mood in the expression *petenda fuerint*.

2. Quumque plurimas et maximas commoditates amicitia contineat, tum illa nimirum præstat omnibus, quod bonam spem praelucet in posterum nec debilitari animos aut cadere patitur. Verum enim amicum qui intuetur tamquam exemplar aliquod intuetur sui. Quocirca et absentes adsunt et egentes abundant et imbecilli valent et, quod difficilius dictum est, mortui vivunt: tantus eos honos, memoria, desiderium prosequitur amicorum: ex quo illorum beata mors videtur, horum vita laudabilis. Quod si exemeris ex rerum natura benevolentiae coniunctionem, nec domus ulla nec urbs stare poterit, ne agri quidem cultus permanebit. Id si minus intelligitur, quanta vis amicitiae concordiaeque sit ex dissensionibus atque ex discordiis percipi potest. Quae enim domus tam stabilis, quae tam firma civitas est quae non odiis et discidiis funditus possit everti? Ex quo quantum boni sit in amicitia iudicari potest.

Agrigentium quidem doctum quemdam virum carminibus Graecis vaticinatum esse ferunt, quae in rerum natura totoque mundo constarent quaeque moverentur, ea contrahere amicitiam, dissipare discordiam. Atque hoc quidem omnes mortales et intelligunt et re probant. Itaque, si quando aliquod officium exstitit amici in periculis aut adeundis aut communicandis, quis est qui id non maximis efferat laudibus? Qui clamores tota cavea nuper in hospitibus et amici mei M. Pacuvii nova fabula! quum ignorante rege uter esset Orestes Pylades Orestem se esse diceret, ut pro illo necaretur, Orestes autem, ita ut erat, Orestem se esse perseveraret. Stantes plaudebant in re ficta: quid arbitramur in vera facturos fuisse? Facile indicabat ipsa natura vim suam, quum homines, quod facere ipsi non possent, id recte fieri in altero iudicarent.—CICERO, *Laelius*, vii.

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General
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amination.

(a) Who was the Agrigentinus, and what is the philosophic doctrine ascribed to him?

(b) Mention what is known of the life and writings of Pacuvius. Quote Horace's criticism.

(c) Describe the form of dialogue employed by Cicero in his philosophical writings. Who are the interlocutors in the *Laelius*? In what year is the dialogue represented as having taken place? Give a brief analysis of its contents.

3. Video adhuc duas esse sententias, unam D. Silani, qui censet eos, qui haec delere conati sunt, morte esse mulctandos, alteram C. Caesaris, qui mortis poenam removet, caeterorum suppliciorum omnes acerbitates amplectitur. Uterque et pro sua dignitate et pro rerum magnitudine in summa severitate versatur. Alter eos, qui nos omnes, qui populum Romanum vita privare conati sunt, qui delere imperium, qui populi Romani nomen extinguere, punctum temporis frui vita et hoc communi spiritu non putat oportere, atque hoc genus poenae saepe in improbos cives in hac re publica esse usurpatum recordatur. Alter intelligit mortem ab dis immortalibus non esse supplicii causa constitutam, sed aut necessitatem naturae aut laborum ac miseriarum quietem. Itaque eam sapientes nunquam inviti, fortes saepe etiam libenter oppetiverunt. Vincula vero et ea sempiterna certe ad singularem poenam nefarii sceleris inventa sunt. Municipiis dispertiri iubet. Habere videtur ista res iniquitatem, si imperare velis, difficultatem, si rogare, Decernatur tamen, si placet. Ego enim suscipiam et, ut spero, reperiam qui id, quod salutis omnium causa statueritis, non putent esse suae dignitatis recusare. Adiungit gravem poenam municipibus, si quis eorum vincula ruperit: horribiles custodias circumdat et dignas scelere hominum perditorum: sancit ne quis eorum poenam, quos condemnat, aut per senatum aut per populum levare possit: eripit etiam spem, quae sola hominem in miseriis consolari solet: bona praeterea publicari iubet: vitam solam relinquit nefariis hominibus: quam si eripuisset, multos uno dolore dolores animi atque corporis et omnes scelerum poenas ademisset. Itaque ut aliqua in vita formido improbis esset posita, apud inferos eius modi quaedam illi antiqui supplicia impiis constituta esse voluerunt, quo videlicet intelligebant iis remotis non esse mortem ipsam pertimescendam.—CICERO, *In Catilinam*, iv., 4.

Why is prominence given to the opinion of D. Silanus? Give instances of the use of *hoc* in the phrase *hoc delere conati sunt*. Point out the connexion with the preceding context of the sentences *Itaque eam sapientes*, &c., and *Itaque ut aliqua*, &c.

Translate into Latin prose:—

1. Neither do years hinder us from retaining these pursuits, even to the extreme limits of old age.

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amination.

2. Tullus had given his ambassadors orders to attend to nothing before their commission.

3. Numa Pompilius lived at the Sabine Cures, a man most deeply versed in all law, human and divine, so far as any one could be at that age.

4. Ancus having committed the care of the sacred rites to the flamens and other priests, levied a new army, and marching upon Politorium, a city of the Latins, he took it by storm.

5. Cæsar hoped that he could bring matters to an end without a battle. Why, he asked himself, should he lose any of his men even in a successful engagement? Why should he suffer soldiers who had deserved well of him to be wounded? Especially when it was no less the part of a commander to conquer by wisdom than the sword.

SECOND YEAR STUDENTS.

[Students who wish merely to pass the Examination are not required to attempt the second section.]

Translate, adding brief notes where a word, a construction or an allusion seems to require it :

I.—Haec inter tumidi late maris ibat imago
Aurea ; sed fluctu spumabant caerulea cano,
Et circum argento clari delphines in orbem
Aequora verrebant caudis, æstumque secabant.
In medio classes aeratas, Actia bella,
Cernere erat ; totumque instructo Marte videres
Fervere Leucanten, auroque effulgere fluctus
Hinc Augustus agens Italos in proelia Cæsar
Cum Patribus Populoque, Penatibus et magnis Dis,
Stans celsa in Puppi : geminas cui tempora flammæ
Lacta vomunt, patriumque aperitur vertice sidus ;
Parte alia ventis et dis Agrippa secundis
Arduus agmen agens ; cui, belli insigne superbum,
Tempora navali fulgent rostrata corona.
Hic ope barbarica variisque Antonius armis,
Victor ab Auroræ populis et litore rubro,
Aegyptum viresque Orientis et ultima secum
Bactra vehit ; sequiturque—nefas !—Aegyptia coniux,
Una omnes ruere, ac totum spumare reductis
Convulsum remis rostrisque tridentibus aequor.
Alta petunt : pelago credas innare revulsas
Cycladas, aut montes concurrere montibus altos :
Tanta mole viri turritis puppibus instant.

II.—Cum labor extuderit fastidia ; siccus inanis
Sperne cibum vilem, nisi Hymettia mella Falerno
Ne biberis diluta. Foris est promus, et atrum,
Defendens pisces hiemat mare : cum sale panis
Latrantem stomachum bene leniet. Unde putas aut
Qui partum ? Non in carò nidore voluptas
Summa, sed in te ipso est. Tu palmentaria quaere
Sudando : pinguem vitilis albumque neque ostrea
Nec scarus aut poterit peregrina iuvare lagois.
Vix tamen eripiam, posito pavone velis quin
Hoc potius quam gallina tergere palatum,

Corruptus vanis rerum, quia veneat auro
Rara avis et picta pandat spectacula canda :
Tanquam ad rem attineat quidquam. Num vesceris ista,
Quam laudas, pluma ? cocto num adest honor idem ?
Carne tamen quamvis distat nil hac magis illa,
Imparibus formis deceptum te patet.

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General
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amination.

"Est genus unum
Stultitiae nihilum metuenda timentis, ut ignes,
Ut rupes fluviosque in campo obstare queratur.
Alterum et huic varum et nihilo sapientius ignes
Per medios fluviosque ruentis : clamet amica,
Mater, honesta soror cum cognatis, pater, uxor
"Hic fossa est ingens, hic rupes, maxima : serva !" ;
Non magis audierit, quam Fufius ebrius olim,
Cum Ilionam edormit, Catienis mille ducentis
"Mater, te appello !" clamantibus. Huic ego vulgus
Errori similem cunctum insanire docebo.
Insanit veteres statuas Damasippus emendo :
Integer est mentis Damasippi creditor ? Esto.
"Accipe quod nunquam reddas mihi" si tibi dicam :
Tunc insanus eris si acceperis, an magis execors
Reiecta praeda, quam praesens Mercurius fert ?
Scribe decem a Nerio—non est satis, adde Cicutae
Nodosi tabulas centum, mille adde catenas ;
Effugiet tamen haec sceleratus vincula Proteus.
Cum rapies in ius malis ridentem alienis,
Fiet aper, modo avis, modo saxum et, cum volet, arbor."

(a) Mention the two applications of the word *Satira*, and trace briefly the origin and history of that Satire of which Horace, Persius, and Juvenal are the representatives. What forms of literature represent it in modern times ?

(b) Criticise the following statements:—

Satira tota nostra est.
Carmen maledicum ad carpenda hominum vitia
[sc. satira est].
Eupolis atque Cratinus Aristophanesque poetæ
Atque alii, quorum comœdia prisca virorum est,—
* * * * *
Hinc omnis pendet Lucilius.
Nil comis tragici mutat Lucilius Atti ?
Non ridet versus Enni gravitate minores ?

(c) Mention any instances you may remember, in which Horace has imitated Lucilius. What judgment should we form of the style of Lucilius from the few fragments which have come down to us ? These fragments are not a fair specimen of the poet's style ?

Translate into Latin prose:—

In one of the earliest of his extant letters to Atticus, written about this time, Cicero gives a lively idea of what a candidate had to go through at Rome, telling him that there was nothing like a canvass to bring a man into contact with every kind of rascality. In the same letter he expresses his disgust at the state of affairs in the city, which, he says, were growing

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worse with incredible rapidity; and he turns with delight to the thought of his Tusculan villa, and the library he had formed there, begging his friend to keep carefully for him some books which Atticus had purchased for him at Athens. Although, owing to the confusion that prevailed, the comitia for the election of prætors was twice adjourned without any definite result, Cicero, who had seven competitors against him, was on both occasions chosen Prætor Urbanus by the unanimous votes of all the centuries. And when at last, on the third attempt, a valid election did take place, the same result followed, and he was still at the head of the poll.

[Students who wish merely to pass the examination are not required to attempt the first section.]

I.—Translate, adding brief notes when you deem it necessary:—

1. Quid est enim in vita tanto opere quaerendum quam quum omnia in philosophia tum id, quod his libris quaeritur quid sit finis, quid extremum, quid ultimum, quo sint omnia bene vivendi rectoque faciendi consilia referenda, quid sequatur natura ut summum ex rebus expetendis, quid fugiat ut extremum malorum? Qua de re quum sit inter doctissimos summa dissensio, quis alienum putet eius esse dignitatis, quam mihi quisque tribuit, quid in omni munere vitae optimum et verissimum sit exquirere? An “partus ancillae sitne in fructu habendus” disseretur inter principes civitatis, P. Scaevolam, M’. Manilium, ab iisque M. Brutus dissentiet—quod et acutum genus est et ad usus civium non inutile, nosque ea scripta reliquaue eiusdem generis et legimus lubenter et legemus: hæc, quæ vitam omnem continent, negligentur? Nam, ut sint illa vendibilia, hæc uberiora certe sunt.—CICERO, *De Finibus*, i., 4, 11.

Explain accurately the legal question referred to.

2. Sed hoc commune vitium: illae Epicuri propriae ruinae: censet enim eadem illa individua et solida corpora ferri deorsum suo pondere ad lineam, hunc naturalem esse omnium corporum motum. Deinde ibidem homo acutus, quum illud occurreret, si omnia deorsum e regione ferrentur et, ut dixi, ad lineam, numquam fore ut atomus altera alteram posset attingere, itaque attulit rem commenticiam: declinare dixit atomum perpallum, quo nihil posset fieri minus: ita effici complexiones et copulationes et adhaesiones atomorum inter se, ex quo efficeretur mundus omnesque partes mundi quæque in eo essent. Quæ quum res tota ficta sit pueriliter, tum ne efficit quidem quod vult. Nam et ipsa declinatio ad libidinem fingitur—ait enim declinare atomum sine causa: quo nihil turpius physico quam fieri quidquam sine causa dicere—et illum motum naturalem omnium ponderum, ut ipse constituit, e regione inferiorem locum petentium, sine causa eripuit atomis, nec tamen id, cuius causa hæc finxerat, adsecutus est. Nam si omnes atomi declinabunt, nullae umquam cohaerescunt, sive aliae declinabunt, aliae suo nutu recte ferentur, primum erit hoc quasi provincias atomis dare, quæ recte, quæ oblique ferantur, deinde eadem illa atomorum, in quo etiam Democritus hæret, turbulenta concursio hunc mundi ornatum efficere non poterit.—*Ibid.*, i., 6, 18.

Who was the inventor of the Atomic Theory which Democritus developed? Give some account of the latter philosopher, and mention the time at which he lived. What was Democritus’ solution of the difficulty referred to in the text? Give the Greek equivalents of the philosophic terms used in the exposition.

3. Nec vero, ut noster Lucilius, recusabo quo minus omnes mea legant. Utinam esset ille Persius! Scipio vero et Rutilius multo etiam magis:

quorum ille iudicium reformidans Tarentinis ait se et Consentinis et Siculis scribere. Facete is quidem, sicut alias, sed neque tam docti tum erant, ad quorum iudicium elaboraret, et sunt illius scripta leviora, ut urbanitas summa appareat, doctrina mediocris.—*Ibid*, i., 3, 7.

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Explain the allusions. Give a brief sketch of the life and writings of Lucilius.

II. Deinde est honos additus : non enim, ut ab Romulo traditum ceteri servaverant reges, viritum suffragium eadem vi eodemque iure promisce, omnibus datum est ; sed gradus facti, ut neque exclusus quisquam suffragio videretur, et vis omnis penes primores civitatis esset. equites enim vocabantur primi ; octoginta inde primae classis centuriae primum peditum vocabantur : ibi si variaret, quod raro incidebat, ut secundae classis vocarentur, nec fere umquam infra ita descenderent, ut ad infimos pervenirent. nec mirari oportet hunc ordinem, qui nunc est post expletas quinque et triginta tribus duplicato earum numero centuriis iuniorum seniorumque, ad institutam ab Servio Tullio summam non convenire. quadrifariam enim urbe divisa regionibusque ac collibus, qui habitabantur, partes eas tribus appellavit, ut ego arbitror a tributo, nam eius quoque aequaliter ex censu conferendi ab eodem inita ratio est. neque eae tribus ad centuriarum distributionem numerumque quicquam pertinere.—*Livy*, i., 43, 10.

1. Give Livy's account of the constitution of the classes by Servius, and point out wherein it differs from that of other writers.

2. Ordinem qui nunc est—When were the Centuries re-constituted ? Describe accurately the new arrangement.

3. What is Mommsen's view of the origin, the principle, and the object of the Servian Constitution ? Compare his theory with that of Livy's.

4. Enumerate the original "Seven Hills" of Rome, and state the evidence for the existence of a second community within the circle afterwards enclosed by the Servian walls. What is the true meaning of the terms *tribus* and *tributum* ?

5. Wherein mainly lies the importance of the conquest of Alba ? Tradition assigns the various great structures of Rome to different kings ? Those ascribed to Servius Tullius are in harmony with his re-organization of the burgess army ? The tradition which connects the foundation of the temple of Diana at Rome with the Artemisium of Ephesus, is by Mommsen regarded as not incredible ?

6. Decreverunt enim, ut, cum populus regem iussisset, id sic ratum esset, si patres auctores fierent. hodie quoque in legibus magistratibusque rogandis usurpatur idem ius vi adempta : priusquam populus suffragium ineat, in incertum comitiorum eventum patres auctores fiunt.—*Livy*, i., 17, 9.

Describe the forms observed in the election of magistrates, and mention, with dates, the laws by which the power of confirming popular elections was virtually taken from the Senate.

THIRD YEAR STUDENTS.

Translate into Latin prose :—

Both Marius and Sulla served as lieutenants to the Consuls in this war, and commanded separate armies in different parts of Italy ; but Marius performed nothing in it answerable to his great name and former glory. His advanced age had increased his caution, and after so many triumphs

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and consulships, he was jealous of a reverse of fortune ; so that he kept himself wholly on the defensive, and, like old Fabius, chose to tire out the enemy by declining a battle, content with snatching some little advantages that opportunity threw into his hands, without suffering them, however, to gain any against him. Sylla, on the other hand, was ever active and enterprising ; he had not yet obtained the consulship, and was fighting for it, as it were, in the sight of his citizens ; so that he was constantly urging the enemy to a battle, and glad of every occasion to signalize his military talents and eclipse the fame of Marius.

Translate :—

1. Ut vero conservetur omnis homini erga hominem societas, coniunctio, caritas, et emolumenta et detrimenta, quae ὠφελήματα et βλάμματα appellant, communia esse voluerunt, quorum altera prosunt, nocent altera. Neque solum ea communia, verum etiam paria esse dixerunt. Incommoda autem et commoda—ita enim εὐχρησθήματα et δυσχρησθήματα appello—communia esse voluerunt, paria noluerunt. Illa enim, quae prosunt aut quae nocent, aut bona sunt aut mala, quae sint paria necesse est : commoda autem et incommoda in eo genere sunt quae praeposita et reiecta dicimus : ea possunt paria non esse. Sed emolumenta communia esse dicuntur, recte autem facta et peccata non habentur communia.—CICERO, *De Finibus*, iii., 21.

Explain accurately the Stoical doctrine laid down in this passage. Give the Greek equivalents of *recte facta* and *peccata*.

2. Tum Piso : Naturane nobis hoc, inquit, datum dicam an errore quodam, ut, quum ea loca videamus, in quibus memoria dignos viros acceperimus multum esse versatos, magis moveamur, quam si quando eorum ipsorum aut facta audiamus aut scriptum aliquod legamus ? Velut ego nunc moveor. Venit enim mihi Platonis in mentem, quem acceperimus primum hic disputare solitum : cuius etiam illi propinqui hortuli non memoriam solum mihi adferunt, sed ipsum videntur in conspectu meo ponere. Hic Speusippus, hic Xenocrates, hic eius auditor Polemo : cuius ipsa illa sessio fuit, quam videmus. Equidem etiam curiam nostram—Hostiliam dico, non hanc novam, quae minor mihi esse videtur, postea quam est maior—solebam intuens Scipionem, Cantonem, Laelium, nostrum vero in primis avum cogitare : tanta vis admonitionis inest in locis, ut non sine causa ex iis memoriae ducta sit disciplina. Tum Quintus : Est plane, Piso, ut, dicis, inquit. Nam me ipsum huc modo venientem convertebat ad sese Coloneus ille locus, cuius incola Sophocles ob oculos versabatur, quem scis quam admirer quamque eo delecter. Me quidem ad altioremem memoriam Oedipodis huc venientis et illo mollissimo carmine quatenus essent haec ipsa loca requirentis species quaedam commovit, inanisscilicet, sed commovit tamen.—*Ibid*, v., 1.

- (a) *Hostiliam dico, non hanc novam*—Explain accurately the allusion.
- (b) Cite the verses of the Oedipus Coloneus to which allusion is made.
- (c) Give some account, with dates, of the philosophers referred to.

3. De summo autem bono quia duo genera librorum sunt, unum populariter scriptum, quod ἐξωτερικὸν appellabant, alterum limatius, quod in commentariis reliquerunt, non semper idem dicere videntur.—*Ibid*, v., 5.

Discuss briefly the question of the twofold division of Aristotle's writings into esoteric and exoteric. What do you understand by the *commentarii Aristotelis* ? State the Peripatetic doctrine of the chief good.

Translate :—

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1. Eodem anno saepius audita vox principis, parem vim rerum habendam a procuratoribus suis iudicatarum ac si ipse statuisset. ac ne fortuito prolapsus videretur, senatus quoque consulto cautum plenius quam antea et uberius. nam divus Augustus apud equestres qui Aegypto praesiderent lege agi, decretaque eorum perinde haberi iusserat, ac si magistratus Romani constituissent. mox alias per provincias et in urbe pleraque concessa sunt, quae olim a praetoribus noscebantur. Claudius omne ius tradidit, de quo totiens seditione aut armis certatum, cum Sempronius rogationibus equester ordo in possessione iudiciorum locaretur, aut rursum Serviliae leges senatui iudicia redderent, Mariusque et Sulla olim de eo vel praecipue bellarent sed tunc ordinum diversa studia, et quae vicerant publice valebant.—TACITUS, *Annals*, xii. 60.

- (a) Classify the persons designated by the words *procuratoribus suis*.
- (b) What was peculiar in the administration of Egypt?
- (c) To whom alone, in strictness, was the title *magistratus* given?
- (d) Give, with dates, a brief account of Roman legislation on the subject of the *iudicia*, so far as is necessary to illustrate the text.

2. Ergo edixit princeps, ut leges cuiusque publici, occultae ad id tempus, proscriberentur; omissas petitiones non ultra annum resumerent; Romae praetor, per provincias qui pro praetore aut consule essent iura adversus publicanos extra ordinem redderent; militibus immunitas servaretur, nisi in iis quae veno exercerent; aliaque admodum aequa, quae brevi servata, dein frustra habita sunt. manet tamen abolitio quadragesimae quinquagesimaeque et quae alia exactionibus illicitis nomina publicani invenerant. temperata apud transmarinas provincias frumenti subvectio; et ne censibus negotiatorum naves adscriberentur tributumque pro illis penderent, constitutum.—*Ibid*, xiii., 51.

- (a) Write brief notes on anything which may require explanation in this passage.
- (b) The *quadragesima* here referred to is not to be confounded with a well-known tax so designated.

3. Comitia praetorum arbitrio senatus haberi solita, quod acriore ambitu exarserant, princeps composuit, tris, qui supra numerum petebant, legioni praeficiendo. auxitque patrum honorem statuendo ut, qui a privatis iudicibus ad senatum provocavissent, eiusdem pecuniae periculum facerent cuius ii qui imperatorem appellavere. nam antea vacuum id solutumque poena fuerat.—*Ibid*, xiv., 28.

Explain anything in this passage which you think requires explanation. What was the amount of caution money lodged by appellants to the Emperor.

Refer to any passages of Tacitus which you may remember, illustrative of the attitude of the Roman State towards foreign religions.

FIRST YEAR STUDENTS.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

THE FRENCH LANGUAGE.

Translate into idiomatic English :—

I.—Un grand plat de rôti, servi peu de temps après les ragoûts, vint achever de rassasier les voleurs, qui, buvant à proportion qu'ils

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mangeaient, furent bientôt de belle humeur, et firent un beau bruit. Les voilà qui, parlent tous à la fois. L'un commence une histoire, l'autre rapporte un bon mot; un autre crie, un autre chante; ils ne s'entendent point. Enfin Rolando, fatigué d'une scène, où il mettait inutilement beaucoup du sien, le prit sur un ton si haut, qu'il imposa silence à la compagnie. Messieurs, leur dit-il d'un ton de maître, écoutez ce que j'ai à vous proposer. Au lieu de nous étourdir les uns les autres en parlant tous ensemble, ne ferions nous pas mieux de nous entretenir en personnes raisonnables? Il me vient une pensée. Depuis que nous sommes associés, nous n'avons pas eu la curiosité de nous demander quelles sont nos familles, et par quel enchaînement d'aventures nous avons embrassé notre profession. Cela me paraît toutefois digne d'être su. Faisons-nous cette confidence pour nous divertir. Le lieutenant et le autres, comme s'ils avaient eu quelque chose de beau à raconter, acceptèrent avec de grandes démonstrations de joie la proposition du capitaine, qui parla le premier dans ces termes.—LESAGE.

II.—LE TORRENT ET LA RIVIERE.

Avec grand bruit et grand fracas
Un torrent tombait des montagnes.
Tout fuyait devant lui; l'horreur suivait ses pas;
Il faisait trembler les campagnes.
Nul voyageur n'osait passer,
Une barrière si puissante;
Un seul vit des voleurs; et, se sentant presser,
Il mit entre eux et lui cette onde menaçante.
Ce n'était que menace et bruit sans profondeur:
Notre homme enfin n'eut que la peur.
Ce succès lui donnant courage,
Et les mêmes voleurs le poursuivant toujours,
Il rencontra sur son passage
Une rivière dont le cours.
Image d'un sommeil doux, paisible et tranquille,
Lui fit croire d'abord ce trajet fort facile:
Point de bords escarpés, un sable pur et net.
Il entre; et son cheval le met
A couvert des voleurs, mais non de l'onde noire:
Tous deux au Styx allèrent boire;
Tous deux, à nager malheureux,
Allèrent traverser, au séjour ténébreux,
Bien d'autres fleuves que les nôtres.
Les gens sans bruit sont dangereux,
Il n'en est pas ainsi des autres.

LA FONTAINE.

Translate into French:—

I.—This house is as large as yours. Is he as clever as his cousin? Gold is the most precious of all metals. I prefer my house to the finest palace. He was a little better, but he is worse now. Book the first, chapter the fourth. William the Third married the Princess Mary, daughter of James the Second. England, France, and Germany are the principal countries of Europe.

II.—Do you know the singing-master? Where is his gold watch? Did you come by the Calais boat? Of what are you thinking? Whose

instruments are these? What makes your sister cry? Here are two novels, will you read this one or that one? Have you paid your tailor and mine? Have you seen any pretty villages along the road? Which is the least important of the three great islands of the Mediterranean?

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III.—Warren Hastings sprang from an illustrious and ancient race. It has been affirmed that his pedigree can be traced to the great Danish sea-king, whose sails were long the terror of both coasts of the British channel, and who, after many fierce and doubtful struggles, yielded at last to the valour and genius of Alfred. But the undoubted splendour of the line of Hastings needs no illustration from fable.—MACAULAY.

IV.—Where upon this earth shall peace be found, if not within the cloistral solitudes of Oxford and Cambridge? Cities of Corinthian beauty and luxury? with endowments and patronage beyond the revenues of considerable nations; in libraries, in pictures, in cathedrals, surpassing the kings of the earth; and, with the resources of capital cities, combining the deep tranquillity of sylvan villages;—places so favoured by time, accident, and law, approach the creations of romance more nearly than any other known realities of Christendom.—DE QUINCEY.

(a) Give the 3rd pl. pres. indic. of the following verbs:—*Aller, tenir, suivre, boire, savoir, se promener, manger, connaître.*

(b) The 3rd sing. fut. } of the same verbs.
(c) The part. passé }

(d) Give the plurals of *bijou, sou, détail, voix, canal.*

(e) Give the feminine of *premier, secret, mineur, serviteur, flatteur, malin, long, bienfaiteur.*

(g) Write in full: 1866, 1879, 51.

SECOND YEAR STUDENTS.

[PASS PAPER.]

Translate into English:

I.—Pour faire plus d'honneur à leurs hôtes, et aussi dans l'espoir de les stupéfier d'admiration, il couvrirent la table de toute leur argenterie. Madame Malais mit sa belle robe à la mode de la ville, qu'elle avait fait faire à Paris douze ans auparavant, et sur laquelle, depuis ce temps, elle avait fait tailler toutes ses robes, pensant que la mode de la ville en tout était comme la mode de certaines localités.

Le meunier était envieux et avait, d'ailleurs, d'anciens griefs contre la famille Malais. Devant ce luxe inusité, il lui semblait à lui-même qu'il n'était peut-être pas aussi riche qu'il se plaisait à le croire, et qu'il n'était pas l'égal des Malais.

Aussi avec la ruse du paysan normand, il ne négligea rien pour froisser ses hôtes, tout en ayant l'air de vouloir leur être agréable. Il ne trouva rien de mieux que de parler beaucoup d'une famille, dont les Malais n'étaient pas très-fiers d'être issus.

Il y avait, dit Eloi, votre grand-père, Malais le marchand de bœufs, qui était de Dive; il avait un fameux bidet, et il faut dire, qu'il était, lui, un fameux cavalier. Il est allé une fois pour acheter des bœufs de Dive en Poitou? Il a fait cette fois-là soixante-quatre lieues sans débrider. C'était un maître homme! Le bidet était gris pommelé, un modèle de cheval.—ALPHONSE KARR.

II.—Ami, regarde l'art et non pas le succès.

Je douterais de toi si tu réussissais

Dès le commencement, sans lutte et sans bataille.

Ils n'entrent pas partout, ceux de la grand taille!

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La vogue est peu. Les noms qu'hier elle allumait
Sont aujourd'hui le fer où la rouille se met.
La vogue à chaque instant veut une autre merveille,
Et ne reconnaît pas ses amants de la veille,
Idoles dont la mode a tenu l'encensoir,
Dieux qui sont quelquefois éternels tout un soir !
Toi donc, sans prendre garde à la tourbe insensée,
Que toutes tes amours soient avec ta pensée.
Fais sans cesse, ta plume ou ton front à la main,
De tes sueurs ton œuvre, et d'aujourd'hui demain.
Et tu l'auras aussi, le fracas populaire,
Plus tard, mais plus longtemps. Passe-toi sans colère
Des applaudissements prompts, parcequ'ils sont courts.
Aujourd'hui, c'est un jour, et demain c'est toujours !

AUGUSTE VACQUERIE.

Translate into French :—

- III.—Soon after his arrival at Fulda, the expedition from Madras, commanded by Clive, appeared in the Hoogley. Warren, young, intrepid, and excited probably by the example of the Commander of the Forces, who, having like himself been a mercantile agent of the Company, had been turned by public calamities into a soldier, determined to serve in the ranks. During the early operation of the war he carried a musket. But the quick eye of Clive soon perceived that the head of the young volunteer would be more useful than his arm.

THIRD YEAR STUDENTS.

[PASS PAPER.]

Translate into English :—

M. Edmond About appartient à la grande famille des conteurs sans parti pris, qui cherchent leur plaisir d'abord et ensuite celui du public. Comme plusieurs autres individus de cette famille, il est membre de la tribune des lettrés que l'Ecole normale élève pour recruter l'enseignement, et qui, en assez grand nombre, faussent tous les ans compagnie à la muse sévère de la grammaire et des humanités, afin de suivre une muse plus légère et plus folâtre. Libre penseur de l'école d'Epicure plutôt que de celle de Zenon, avec un penchant décidé pour la raillerie, une humeur gaie, folâtre et un peu bruyante, on l'a vu frapper à la fois à presque toutes les portes de la renommée, décidé à les enfoncer si elles ne s'ouvraient pas assez vite devant lui. Romancier, journaliste, pamphlétaire, auteur dramatique et voyageur, il a battu monnaie sur tous les comptoirs de la littérature. Il ne manque ni de gaieté d'esprit ni de vivacité dans le tour. Son style, dans ses bons jours, est alerte et marqué au coin de cette langue française du dix-septième siècle, pareille à ces excellentes monnaies qui, contenant plus d'or que n'en annonce leur titre, auront toujours cours. Mais la sensibilité n'est pas son fort ; la mesure, la tenue et le tact lui font souvent défaut.—ALFRED NETTEMENT.

Don Diègue : Qu'on est digne d'envie,
Lorsqu'en perdant la force on perd aussi la vie
Et qu'un long âge apprête aux hommes généreux,
Au bout de leur carrière, un destin malheureux !

Moi, dont les longs travaux ont acquis tant de gloire,
Moi, que jadis partout a suivi la gloire,
Je me vois aujourd'hui, pour avoir trop vécu,
Recevoir un affront, et demeurer vaincu.
Ce que n'a pu jamais combat, siège, embuscade,
Ce que n'a pu jamais Aragon, ni Grenade,
Ni tous vos ennemis, ni tous mes envieux,
Le comte en votre cour l'a fait presque à vos yeux,
Jaloux de votre choix, et fier de l'avantage
Que lui donnait sur moi l'impuissance de l'âge.
Sire, ainsi ces cheveux blanchis sous le harnois,
Ce sang pour vous servir prodigué tant de fois,
Ce bras, jadis l'effroi d'une armée ennemie,
Descendaient au tombeau tout chargés d'infamie,
Si je n'eusse produit un fils digne de moi,
Digne de son pays, et digne de son roi :
Il m'a prêté sa main, il a tué le comte ;
Il m'a rendu l'honneur, il a lavé ma honte.

CORNEILLE.

Translate into French :—

It is remarkable that the practice of separating the two ingredients of which history is composed has become prevalent on the Continent as well as in this country. Italy has already produced a historical novel, of high merit and of still higher promise. In France the practice has been carried to a length somewhat whimsical. M. Sismondi publishes a grave and stately history of the Merovingian Kings, very valuable, and a little tedious. He then sends forth, as a companion to it, a novel, in which he attempts to give a lively representation of characters and manners.—MACAULAY.

SECOND AND THIRD YEAR STUDENTS.

[SECOND PAPER.]

Translate into French :—

It appears probable, that the custom of receiving arms at the age of manhood with some solemnity was of immemorial antiquity among the nations that overthrew the Roman Empire. For it is mentioned by Tacitus to have prevailed among their German ancestors ; and his expressions might have been used with no great variation to describe the actual ceremonies of knighthood. There was, even in that remote age, a sort of public trial as to the fitness of the candidate, which, though perhaps confined to his bodily strength and activity, might be the germ of that refined investigation which was thought necessary in the perfect stage of chivalry. Proofs, though rare and incidental, might be adduced to show, that in the time of Charlemagne, and even earlier, the sons of monarchs at least did not assume manly arms without a regular investiture. And in the eleventh century, it is evident that this was a general practice.—HALLAM.

1. Give the different meanings of the following nouns, according as they are used as masculines or as feminines : *livre, trompette, voile, souris*.
2. Explain the difference between the following expressions : *venir pour, dire, venir de dire, venir à dire*.
3. What are the respective significations of the following homonymes : *cour, cours, court, (il) court*.

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4. How is the gender of the following nouns affected by their etymology: *voyage* (*viaticum*), *image* (*imago*), (*cage*) *cavea*, *rage* (*rabies*).
5. What is meant by the three unities in French dramatic literature?
6. Mention the principal comedies of Regnard.
7. Analyse any play you may have read, of either Corneille or Racine.
8. Show the influence of English literature on Voltaire.
9. State what you know of Piron.

MEDICAL STUDENTS.

[Questions 1 and 5 are exclusively for the second division.]

Translate into English :—

I. Le jardinier Lenôtre, qui a planté les jardins de Versailles et des Tuileries n'est pas devenu moins célèbre que les architectes qui ont élevé ces palais. Sa réputation s'était étendue non-seulement en France, mais dans l'Europe entière. De toute part on s'adressait à lui pour en obtenir des plans et des dessins de jardins et de parcs destinés à embellir les résidences royales et les châteaux des grands seigneurs. Lenôtre n'en conservait pas moins la simplicité de manières et la naïveté de sentiments qu'il devait à sa profession et aux exemples de son excellent père dont il garda jusqu'à la fin le plus pieux et le plus tendre souvenir. Trois mois avant la mort de Lenôtre, Louis XIV., qui aimait à le voir et à le faire causer, le mena dans ses jardins, et, à cause de son grand âge (il avait 88 ans), le fit mettre dans une chaise que des porteurs roulaient à côté de la sienne, et Lenôtre disait là : "Ah ! mon pauvre père, si tu vivais et que tu pusses voir un pauvre jardinier comme moi, ton fils, se promener en chaise à côté du plus grand roi du monde, rien ne manquerait à ma gloire."—SAINT SIMON, *Mémoires*.

II.—Je ne pouvais entrer dans une meilleure maison ; aussi ne me suis-je point repenti dans la suite d'y avoir demeuré. Don Vincent était un vieux seigneur fort riche, qui vivait depuis plusieurs années sans procès et sans femme, les médecins lui ayant ôté la sienne, en voulant la défaire d'une toux qu'elle, aurait encore pu conserver longtemps, si elle n'eût pas pris leurs remèdes. Au lieu de songer à se remarier, il s'était donné tout entier à l'éducation d'Aurore, sa fille unique, qui entraît alors dans sa vingt-sixième année, et pouvait passer pour une personne accomplie. Avec une beauté peu commune, elle avait un esprit excellent et très-cultivé. Son père était un petit génie ; mais il possédait l'heureux talent de bien gouverner ses affaires. Il avait un défaut qu'on doit pardonner aux vieillards : il aimait à parler, et, sur toutes choses, de guerre et de combats. Si par malheur on venait à toucher cette corde en sa présence, il embouchait dans le moment la trompette héroïque, et ses auditeurs se trouvaient trop heureux quand ils en étaient quittes pour la relation de deux sièges et de trois batailles.

LESAGE.

III.—L'hiver redoublant ses ravages,
Désole nos toits et nos champs ;
Les oiseaux sur d'autres rivages
Portent leurs amours et leurs chants.
Mais le calme d'un autre asile
Ne les rendra pas inconstants ;
Les oiseaux que l'hiver exile
Reviendront avec le printemps.

A l'exil le sort les condamne,
Et plus qu'eux nous en gémissons !
De palais et de la cabane
L'écho redisait leurs chansons.
Qu'ils aillent d'un bord plus tranquille
Charmer les heureux habitants.
Les oiseaux que l'hiver exile
Reviendront avec le printemps.

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amination.

Ils penseront à notre peine,
Et, l'orage, enfin dissipé,
Ils reviendront sur le vieux chêne
Que tant de fois il a frappé.
Pour prédire au vallon fertile
De beaux jours alors plus constants,
Les oiseaux que l'hiver exile
Reviendront avec le printemps.

BERANGER.

Translate into French :—

IV.—It is not the Spaniards alone who have found exceeding difficulty in preserving nations, comparatively barbarous, whom they have subjugated. And it is admitted by all those who have investigated the subject, that it would be one of the highest triumphs of civilization, and one of the foremost proofs of extraordinary vigour of government, if a conquering race were to succeed in subjugating, civilizing, and at the same time preserving the aborigines of any country that they may conquer. On the importance of preserving them it is difficult to speak too highly, if they are regarded only as labourers, acclimatized and fitted to the soil,—a conclusion which cannot with certainty be pronounced of their conquerors until many generations have passed away.

ARTHUR HELPS.

V.—Give :—

1. The plurals of *nez, monsieur, cheval, bateau, bal, ciel*.
 2. The feminine of *mon, joli, beau, vieux, fou, complet*.
 3. The 2 sing. pres. ind. of *faire, dire, obliger, mettre, écrire, vouloir*.
 4. 1 pl. fut.
 5. Part. present
- } of the same verbs.

THE GERMAN LANGUAGE.

FIRST YEAR STUDENTS.

I.—Translate into English :—

Sobald er soweit genesen war, um das Zimmer wieder verlassen zu können, beredete ihn der Arzt, eine Spazierfahrt auf der Brenta zu machen, um die Luft zu verändern. Das Wetter war hell und die Partie ward angenommen. Als wir eben im Begriff waren, in die Gondel zu steigen, vermisste der Prinz den Schlüssel zu einer kleinen Schatulle, die sehr wichtige Papiere enthielt. Sogleich kehrten wir um ihn zu suchen. Er besann sich auf das genaueste, die Schatulle noch den vorigen Tag verschlossen zu haben, und seit dieser Zeit war er nicht aus dem Zimmer gekommen. Aber alles Suchen war umsonst, wir mußten davon absteigen um die Zeit nicht zu verlieren. Der Prinz, dessen Seele über jeden Argwohn erhaben war, erklärte ihn für verloren und bat uns nicht weiter davon zu sprechen.

Schiller.

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General
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amination.

II.—Der Tailsiefer ritt vor allem Normannenheer

Auf einem hohen Pferde mit Schild und mit Speer;
Er sang so herrlich, das klang über Hastingsfeld,
Von Roland sang er und manchem frommen Hels.

Und als das Rolandslied wie ein Sturm erscholl,
Da wallte manch Panier, manch Herze schwoll,
Da brannten Ritter und Mannen von hohem Muth,
Der Tailsiefer sang und schürte das Feuer gut.

Dann sprengt' er hinein und führte den ersten Stoß,
Davon ein englischer Ritter zu Boden schoß.
Dann schwang er das Schwert und führte den ersten Schlag,
Davon ein englischer Ritter am Boden lag.

Normannen sahen's, die harrten nicht allzu lang
Sie brachen herein mit Geschrei und mit Schilderklang.
Sei, tausende Pfeile, klirrender Schwertereschlag!
Bis Harald fiel und sein trotziges Heer erlag.

Uthland.

III.—Translate into German :—

I should have said it, if you had wished it. Who has recommended him? I have poured wine into the glass. We are reading a German book. The clock strikes. I should say it, if I thought otherwise. She was going to visit us, but she has not been able to come. Can you do it? All men must die. I should go to Germany, if I could speak German. I have been obliged to write a letter. We rise early. The thief has run away. The sun was just rising when we set out. It is fine weather. My father has two sons and three daughters. She has a younger sister. Cicero was the greatest orator of Rome. Who has made the fewest mistakes? They looked at each other. I prefer our house to theirs. Can you tell me in which house Mr. A. lives? What kind of wood is that? It is half-past seven.

IV.—Give the inf., imperf., and part. perf. of the verbs to cut, to do, to know, to receive, to burn, to lose.

2. Decline : der hohe Baum, ein grünes Feld.
3. Which are the feminine terminations of nouns?
4. Mention the prepositions which govern the dative.
5. Explain under what circumstances a prefix is separable from its verb.
6. When does an inversion take place in a principal sentence?

SECOND YEAR STUDENTS.

[PASS PAPER.]

I.—Translate into English :—

Blücher war der ächteste Ausdruck der Stimmungen, die Volk und Heer belebten. Der sechzigjährige Veteran aus Friedrich's Zeit war ein Jüngling an körperlicher Kraft und Frische, wie an Begeisterung und Thatenlust. Die stolze, heldenhafte Art des alten Preussenthums verband sich bei ihm mit dem ungebeugten Sinn eines Patrioten, der die Schmach der Unterdrückung tief empfand und den Fremden unbefchreiblich haßte. Im Volke lebte ein gleiches Gefühl; außer Stein war kein hervorragender Mann zu nennen, der diese populäre Empfindung so innig theilte, so unverholen kundgab wie Blücher. Es

war eine Selbengefäßt, die sich volksthümlich und imposant zugleich hervorhob; denn die soldatische Derbheit und Sozialität des Mannes ruhte auf einem tiefen und innerlichen Grunde, und sein sorglos heiterer Humor verbarg einen gewaltigen Ernst, welcher an das Größte sich wagte und das Schwierigste in frommer Zuversicht glücklich vollendete. Wie Arndt bei der Schilderung seines äußern Erscheinens sagt, sein Gesicht habe gleichsam zwei verschiedene Welten gehabt und während um Mund und Kinn lauernde Husarenlust spielte, habe auf der Stirn und um Augen Schönheit und Hoheit gethront, so war es mit seinem ganzem Wesen beschaffen.

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amination.

Häusser.

II.—Wallenstein spricht:

Wie, mein Herr Abgesandter? Ich soll's wohl
Nicht merken, daß man's müde ist, die Macht,
Des Schwertes Griff in meiner Hand zu sehn?
Daß man begierig diesen Vorwand hascht,
Den spanischen Namen braucht, mein Volk zu mindern,
In's Reich zu führen eine neue Macht,
Die mir nicht untergeben sei. Mich so
Gerad bei Seit' zu werfen, dazu bin ich
Euch noch zu mächtig. Mein Vertrag erheischt's,
Daß alle Kaiserheere mir gehorchen,
So weit die deutsche Sprach' geredet wird.
Von spanischen Truppen aber und Infanten,
Die durch das Reich als Gäste wandernd ziehn,
Steht im Vertrage nichts.—Da kommt man denn
So in der Stille hinter ihm herun,
Macht mich erst schwächer, dann entbehrlich, bis
Man kürzeren Proceß kann mit mir machen.
Wozu die krummen Wege, Herr Minister?
Gerad heraus! Den Kaiser brüdt das Pactum
Mit mir. Er möchte gerne, daß ich ginge.
Ich will ihm den Gefallen thun: das war
Beschllossene Sache, Herr, noch eh' Sie kamen.
Es thut mir Leid um meine Obersten;
Noch seh' ich nicht, wie sie zu ihren vorgeschossnen Geldern.
Zum wohlverdienten Lohne kommen werden.
Neu Regiment bringt neue Menschen auf,
Und früheres Verdienst veraltet schnell.

Schiller.

III.—Translate into German:—

Without a division of labour the world could not go on. It is of very much more importance that men should have food than that they should have pianofortes. Yet it by no means follows that every pianoforte-maker ought to add the business of a baker to his own; for, if he did so, we should have both much worse music and much worse bread. . . . The community, it is plain, would be thrown into universal confusion, if it were supposed to be the duty of every association which is formed for one good object, to promote every other good object.

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amination.

SECOND AND THIRD YEAR STUDENTS.

[SECOND PAPER.]

Translate into German :—

Saddled or not saddled, in the wars between the Spaniards and the Indians, the horse did not play a subordinate part; the horse made the essential difference between the armies; and if, in the great square of Madrid, there had been raised some huge emblem, in stone, to commemorate the Spanish conquest of the New World, an equine, not an equestrian, figure would appropriately have crowned the work. The arms and the armour might have remained the same. The ineffectual clubs and darts and lances might still have been arrayed against the sharp Biscayan sword and deadly arquebuss; the cotton doublet of Cusco against the steel corslet of Milan; but, without the horse, the victory would ultimately have been on the side of overpowering numbers. The Spaniards might have hewn into the Peruvian squadrons, making clear lanes of prostrate bodies. Those squadrons would have closed together again, and by mere weight would have compressed to death the little band of heroic Spaniards. In truth, had the horse been created in America, the conquest of the New World would not improbably have been reserved for that peculiar epoch of development in the European mind, when, as at present, mechanical power has in some degree superseded the horse, that power being naturally measured by the units contained in it of the animal force which it represents and displaces.—ARTHUR HELPS.

1. Mention the principal authors of the Romantic school, and state in what departments of literature they have chiefly distinguished themselves.
2. What is meant by a *Tendenz-Roman*? Mention a few specimens.
3. Give an outline of any dramatic work of either Gutzkow, or Hebbel, or Platen.
4. Mention the most important of Lessing's critical writings, and explain on what occasion they were written.
5. What are the great defects of Jean Paul's style?

THIRD YEAR STUDENTS.

[PASS PAPER.]

I.—Translate into English :—

Es ist ein allgemeines Gesetz, daß nach einer Ausdehnung der Kultur in weite Kreise sich diese wieder verengern, so wie, daß nach Erschöpfung der Bildung in dem Einen Stande ein anderer an dessen Stelle tritt. Nach der Blütezeit der ritterlichen Dichtung, in welcher die Boese in diesem die Nation damals vertretenden Stande allgemein verbreitet war, trat sie in den verwandten Kreis gelehrter Rittersleute und ritterlicher Geistlichen und von da aus immer bestimmter unter die Gelehrten von Gewerbe zurück, während welcher Einschränkung sich dann zugleich die desto weitere Ausdehnung in's Volk vorbereitete. Die reinere Ritterdichtung hatte ihren Sitz an den Höfen, die gelehrten, gnomischen Dichter waren in eine Art von Schulen getheilt, unter denen ein freundlicher oder feindslicher Verkehr war.

Gervinus.

II.—Wie man den König an dem Uebermaß
Der Gaben kennt: denn ihm muß wenig scheinen
Was Tausenden schon Reichthum ist; so kennt
Man euch, ihr Götter, an gesparten, lang'

Und weise zubereiteten Geschenken.
Denn ihr allein wißt, was uns frommen kann,
Und schaut der Zukunft ausgedehntes Reich,
Wenn jedes Abends Stern- und Nebelhülle
Die Aussicht uns verdeckt. Gelassen hört
Ihr unser Flehn, das um Beschleunigung
Euch kindisch bittet; aber eure Hand
Bricht unreif nie die goldnen Himmelsfrüchte;
Und wehe dem, der ungeduldig sie
Ertrotzend saure Speise sich zum Leb'
Genießt. O laßt das lang' erwartete,
Noch kaum gedachte Glück nicht, wie den Schatten
Des abgeschiednen Freundes eitel mir
Und dreifach schmerzlicher vorübergehn.

Goethe.

Translate into German—

III.—Mr. Hallam is, on the whole, far better qualified than any other writer of our time for the office which he has undertaken. He has great industry and great acuteness. His knowledge is extensive, various, and profound. His mind is equally distinguished by the amplitude of its grasp and by the delicacy of its tact. His speculations have none of that vagueness which is the common fault of political philosophy. On the contrary, they are strikingly practical, and teach us not only the general rule, but the mode of applying it to solve particular cases.

MATHEMATICS.—*Examiner, Professor Purser.*

FIRST YEAR STUDENTS.

ALGEBRA.

1. If $\frac{x}{y} = \frac{a}{b}$ show that $\frac{xy}{x^2+y^2} = \frac{ab}{a^2+b^2}$

2. Solve the equations

$$\begin{cases} ax+by=c \\ a'x+b'y=c' \end{cases}$$

$$\frac{x+\alpha}{x+\beta} = \frac{x+\gamma}{x+\delta}$$

3. Solve the equations

$$\frac{1}{x} - \frac{x-1}{x+1} = \frac{1}{6}$$

$$\sqrt{x+a} + \sqrt{x+b} = \sqrt{2x}$$

4. A rectangular garden contains 1260 sq. yards, the length of the diagonal is 53 yards. Calculate the sides.

5. Find the sum of the first n odd numbers.

Sum the series $1 + \frac{2}{3} + \frac{4}{9} + \dots$, *ad infinitum*.

6. Define the logarithm of a number to the base 10. What is meant by the characteristic and mantissa? Given $\log 3 = 0.4771213$
 $\log 7 = 0.8450980$.

Find $\log 63$ $\log (.0049)$

Why have logarithmic cosines and logarithmic secants the same tabular differences?

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7. Solve the equations

$$x^3 + y^3 = 117 \quad x^3 + y^3 - xy = 39.$$

8. Find an expression containing integer powers of x not higher than the second, which shall assume the values A, B, C , respectively, when for x is substituted α, β, γ .

9. If $\phi(x) \phi(y) = \phi(x+y)$ whatever be x and y , prove that $\phi(x) = a^x$ where a is a constant.

10. Find the greatest value which

$$\frac{x^2 + x - 2}{x^2 - x + 2} \text{ can have.}$$

11. A pays on a lease which will expire in 50 years £100 a year for an estate that is worth £200 a year. He wishes to exchange his terminable lease for a lease for ever. Calculate what increase of rent he ought to pay.

The rent is paid half yearly. Interest computed at 4 per cent.

$$\log 102 = 2.0086002$$

$$1.13998 = \log .13804 \quad \text{nearly.}$$

12. Eliminate x and y from the equations

$$\left. \begin{aligned} x^2 + ay &= a^2 \\ y^2 + bx &= b^2 \\ x + y &= c \end{aligned} \right\}$$

expressing the result in a rational and symmetrical form.

CONIC SECTIONS.

The Propositions to be proved Geometrically.

1. If P is a point on a conic and Q the point where the tangent at P meets the directrix, PQ subtends a right angle at the focus.

2. The circle circumscribing the triangle formed by three tangents to a parabola passes through the focus.

3. The sum of the reciprocals of the segments of any focal chord of a conic is constant.

4. Find the locus of the intersection of the perpendicular let fall from the focus on the tangent to an ellipse with the radius vector drawn from the centre to the point of contact.

5. The focal chord of curvature at any point of a conic is equal to the focal chord of the conic parallel to the tangent at the point.

6. The locus of the middle points of all chords of an ellipse drawn through a given point is a similar and similarly placed ellipse.

GEOMETRY AND TRIGONOMETRY.

1. On the same straight line and on the same side of it there cannot be two similar segments of circles, not coinciding with one another.

2. Describe a circle about a given triangle.

3. Similar triangles are to one another in the duplicate ratio of their homologous sides.

4. Define the circular measure of an angle. Given that the number of seconds in the angular unit = 206265. Find the circular measure of $23^\circ 27' 13''$.

5. Prove the formula

$$\sin (A-B)=\sin A \cos B-\cos A \sin B$$

when each of the angles is less than a right angle.

6. Show that in any triangle $c^2=a^2+b^2-2ab \cos C$ whether C is acute or obtuse.

Hence find a formula for $\tan \frac{1}{2} C$ adapted to logarithmic computation.

7. Express the area of a triangle

1° in terms of two sides and the included angle

2° in terms of the three sides.

8. The rectangle under the perpendiculars let fall from any point on a circle on two tangents is equal to the square of the perpendicular let fall on their chord of contact.

9. Find a point (P) inside a triangle (ABC) such that the sum of its distances from the vertices be least.

Solve also the more general question to find P , so that $aPA+bPB+cPC$ may be least, where any two of the multiples a, b, c , are together greater than the third.

10. If $A'B'C'$ are the points of contact of the circle inscribed in the triangle ABC , prove that

$$\frac{\text{area of } (A'B'C')}{\text{area of } (ABC)} = \frac{r}{2R}$$

where r, R , are the radii of the inscribed and circumscribed circles.

11. Express the radius of the circle circumscribing a quadrilateral in terms of the sides.

Hence find the relation subsisting amongst the sines of four angles whose sum is 180° .

12. Find sine and cosine of 36° .

13. Express the internal and external bisectors of the vertical angle of a triangle in terms of that angle and the containing sides.

14. Prove the series $\tan^{-1}x = x - \frac{x^3}{3} + \frac{x^5}{5} - \&c.$

$\tan^{-1}x$ has an indefinite number of values corresponding with a given value of x . What step in the investigation determines, which is the one represented by this series.

15. Express in a rational form the relation subsisting amongst the six lines connecting four points.

16. Apply the series $\sin \theta = \theta - \frac{\theta^3}{1.2.3} + \&c.,$

to calculate $\sin 3^\circ$ to 5 places of decimals.

Why is this series always convergent?

SECOND YEAR STUDENTS.

DIFFERENTIAL CALCULUS.

1. Show from fundamental conception of a differential co-efficient that .

$$\frac{d \sin x}{d x} = \cos x \quad \frac{d}{d x} \left(\frac{1}{x^3} \right) = -\frac{3}{x^4}$$

2. If $u=z$ $z=\sqrt{y+a}$ $y=e^{-xz}$

Find $\frac{du}{dx}$

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amination.

3. Prove that the curve $y = (x-a)^3 + (x-a)$ cuts the axis of x at an angle of 45° .

4. Find the limiting values of

$$\frac{e^x - e^{-x}}{\log(1+x)} \text{ and of } \frac{\sin x - \sin^{-1}x}{x^3} \text{ where } x=0$$

5. Show that $\frac{x^3 - 3x}{\sqrt{1+x^3}}$ is a minimum when $x=1$.

6. Prove that if $f(x)$, $f'(x)$, $f''(x)$ are finite and continuous from a to $a+h$

$$f(a+h) = f(a) + f'(a)\frac{h}{1} + f''(a+\theta h)\frac{h^2}{1.2}$$

where θ lies between 0 and 1.

Expand $\tan^{-1}x$ by Maclaurin's theorem.

7. At a point on a curve where the angle which the radius vector makes with the tangent is a maximum or a minimum, the corresponding radius of curvature subtends a right angle at the origin.

8. Given the curve

$$y^3 + ax^3 + bx^2y + cxy^2 + dy^3 + \text{higher terms} = 0$$

Examine the limiting values of

$$\left(\frac{y}{x}\right), \quad \left(\frac{y}{x^2}\right), \quad \left(\frac{y^2}{x^2}\right)$$

as x approaches zero.

Hence show that when the co-efficient a does not vanish, the origin is a cusp, the tangent at which is the axis of x , and that the curvature in the neighbourhood of the cusp increases indefinitely.

9. Prove that in general at a point of inflexion

$$\frac{d^2u}{d\theta^2} + u = 0 \text{ where } u = \frac{1}{r}.$$

Through a fixed point O on the circumference of a circle, a radius vector OP is drawn to the curve, and produced to a point Q , such that PQ is of given length (b).

Show that the curve locus of Q has two points of inflexion if b lies between a and $2a$, a being the diameter of the given circle.

10. Prove the expression for the radius of curvature

$$R = \frac{\left\{ 1 + \left(\frac{dy}{dx} \right)^2 \right\}^{\frac{3}{2}}}{\frac{d^2y}{dx^2}}$$

Transform it into a function where θ is the independent variable having given $x = r \cos \theta$ $y = r \sin \theta$.

Find the radius of curvature at any point of the curve $x^{\frac{2}{3}} + y^{\frac{2}{3}} = a^{\frac{2}{3}}$.

11. Find the envelope of a line such that the segment of it intercepted between two given lines at right angles subtends a right angle at a given point.

12. Find the maximum value of $u = (x+1)(y+1)(z+1)$ x, y, z , being subject to the condition $a^x b^y c^z = A$

ANALYTICAL GEOMETRY, &c.

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amination.

1. Explain fully the method of calculating the base and base angles of a triangle when the vertical angle and the containing sides are given.

2. What is meant by the equation of a right line or curve? Find the equation of a right line passing through the point $x = 2$ $y = 1$ and making an angle of 30° with the axis of x .

3. Examine what curves are represented by the following equations, describing each as fully as you can, and illustrating by diagrams.

$$3x + 5y + 15 = 0 \quad x^2 + y^2 - 6x - 10y = 15 \quad x^2 - y^2 = 9$$

4. Find the equation of the tangent to the conic

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \quad (1^\circ) \text{ without } (2^\circ) \text{ with the aid of the differential}$$

calculus.

5. If the equation

$$ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$$

represent a pair of right lines, find the tangent of the angle between them.

6. A rectangular hyperbola passes through a given point, and is concentric with a given ellipse. Find the envelope of their chords of intersection.

7. Find the condition that the four points of intersection of two conics, each given by the general equation, lie on the same circle.

8. Find the condition that the line $x \cos a + y \sin a = p$ be normal to the conic $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.

9. Prove that when the axes of co-ordinates are transformed

$$\frac{h^2 - ab}{\sin^2 \omega} \quad \frac{a + b - 2h \cos \omega}{\sin^2 \omega} \quad \text{are invariants } a, 2h, b,$$

being the co-efficients of the highest terms in a function of x & y of the second degree.

CHEMISTRY.—*Examiner, Dr. Andrews.*

[HONOR PAPER.]

1. How is the maximum density point of water determined by experiment?

2. Give an account of the principal facts which have been ascertained regarding the regelation of ice.

3. Describe an arrangement by which you can determine for pressures less than that of the atmosphere, the pressures corresponding to the temperatures at which water may be made to boil.

4. Give a brief account of the two most important methods of determining the specific heat of a solid body.

5. Give some account of the solar heat spectrum.

6. State the composition and describe the analysis of atmospheric air.

7. State the composition, by weight and by volume, of the deutoxide of nitrogen, its mode of preparation, and principal properties.

8. Why is nitric acid (according to the new views) considered to be a monobasic and sulphuric acid a bibasic acid? Write the formulas of oil of vitriol and of the neutral and acid sulphates of potash, on the supposition that sulphuric acid is a bibasic acid.

9. What are the chief constituents of coal gas?

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10. What are the different proportions in which gases are known to combine, and the volume in each case of the compound formed.

11. Give an account of the preparation, composition, and chief properties of the fulminate of mercury.

12. The formula of the mineral feldspar is $\text{KO}, \text{SiO}_2 + \text{Al}_2\text{O}_3, \text{SiO}_2$, assuming the atomic weight of silicon to be 21. Write the corresponding formulas for the same body, taking silicon in the first place to be 14, and in the next 7.

13. Give some account of the new metals cesium and rubidium, and describe their spectra.

14. State the principal observations which have been made on the solubility of salts, and mention in particular the effects of heat upon the solubility of chloride of sodium and of sulphate of soda.

15. What is the action of heat upon the following bodies :—



16. Explain dimorphism and illustrate your meaning by referring to the dimorphism of sulphur, of carbonate of lime, and of some of the metals.

17. Describe the oxides of copper, and the uses to which they have been applied.

18. How is the density of a vapour determined?

19. Give an account of the alcoholic fermentation, and describe the relations of acetic acid to the alcohol series.

20. Describe the action of polarized light on solutions of sugars and on the varieties of tartaric acid?

21. What is meant by a dielectric, and state how Faraday has shown that bodies act unequally as dielectrics.

22. Give an account of the inductive action of magnets, or of an electrical current, upon conductors, and explain how the induced current may acquire a far greater tension than the original current.

23. Apply Ohm's theorem to the determination of the resistance of a given length of telegraph wire in terms of a standard wire.

24. Explain the chemical actions which take place in Daniell's and in Grove's battery.

25. If the heat produced by the conversion of equal weights of carbon and carbonic oxide with carbonic acid be a and b , find an expression for the heat produced by the conversion of carbon into carbonic oxide.

[Answers will be received to not more than five of the questions 19 to 25 from the same candidate.]

[PASS PAPER.]

1. Give an account of the Centigrade and of Fahrenheit's scales, and state the corresponding degrees of Fahrenheit when the Centigrade thermometer stands at 10° and $+30^\circ$.

2. What is meant by the latent heat of water? State also its amount, and how it is determined.

3. Describe the construction and uses of the barometer.

4. State the composition of atmospheric air, and describe the method of analysing it.

5. How is nitrogen gas prepared, and under what conditions will it combine with oxygen?

6. What are the sources of iodine and its characteristic properties?

7. State the proportions in which gases have been observed to combine.

8. What is the composition of sugar? Describe the principal varieties of sugar, and from what sources they are obtained.

9. Give an account of the changes which take place in alcoholic fermentation. Appendix,
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10. What are the principal substances obtained from the distillation of coal? General
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amination.

MEDICAL STUDENTS.

To substitute for Questions 21, 22, 23, 24, 25, the following :—

21a. Describe the preparation and properties of arseniuretted hydrogen.

22a. Give a general account of the composition, preparation, and properties of the volatile alcohols. State also their relations to ammonia.

23a. State the composition of the formic and acetic acids, and describe their chief reactions.

NATURAL PHILOSOPHY.—*Examiner, Dr. Strevell.*

PHYSICS.

1. State the argument derived from Astronomy which leads to the conclusion that matter or body is limited in its divisibility, or that in any of its states it consists ultimately of atoms or molecules.

2. State the argument derived from the facts and laws discovered by the Chemist which leads to the same conclusion.

3. State some of the familiar facts which prove that a body may virtually retain two different motions in different directions and with different velocities, though it can only move in one definite line and with some definite velocity in absolute space at any one instant.

4. Describe the lever. Define the term "arm of the lever," as used in modern works, and distinguish the meaning of the term as used by the older writers on mechanics. State and prove the relation of two forces when they equilibrate on the lever.

5. State the two perfections of the balance which its adjustments are intended to effect. Describe them, and state the adjustments necessary to produce them.

6. When a heavy body falls within moderate ranges from rest at a given place, state the relation which is found to exist between the distances it passes through, and the times it takes to pass through those distances. Describe the experimental proofs of what you assert.

7. Define specific gravity, and describe the method of taking the specific gravity of quicksilver, and the precautions to be attended to.

8. A lump of glass, which has been ground to such a form as to displace exactly 1,000 grains of distilled water, when weighed in a sample of strong sulphuric acid, is found to weigh 1,845 grains less than it did in air: find the specific gravity of the sulphuric acid, and prove what you assert.

9. Explain the optical distinction between a white body and one which in daylight appears red or yellow, or green or blue.

10. In terrestrial magnetism, explain what is meant by the "Declination," the "Variation," and the "Dip" of the needle at a given place.

11. Describe Daniell's Constant Galvanic Battery, and explain on what its constancy depends.

12. Describe the effect exercised on a freely suspended magnetic needle by a galvanic current traversing a wire placed over, or under, or in front of the needle.

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No. 8.

General
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amination.

THIRD YEAR ENGINEERING STUDENTS.

1. Explain what engineers mean by quantity of work; what the unit of work in use by them is, and how the work done in any given time is expressed.

2. Explain what is commonly understood among engineers by a horse-power. Why this number is selected, and what experiments have to be performed in order to ascertain the average amount of work horses are capable of performing, working eight hours in the day.

3. An engine of five horses effective power lifts 30 cwts. of coal per hour from a pit 240 fathoms deep, and at the same time works a forge hammer making twenty-five lifts per minute, each lift being three feet high required the weight of the hammer. Find the general formula whose solution would give the answer to this question, in which symbols being put for the numbers which may vary in it, any one of them may be found when all the others are given.

4. Classify the moving forces which man has at his command, and give the law which governs the action of fluids in motion, on resisting surfaces impelled upon them, (1) perpendicularly, (2) obliquely. Distinguish the two effects in the latter case.

5. Explain the difference of the properties of water by which the work done by the overshot and by the undershot wheels are effected, and explain the principle on which the horse-power of an undershot wheel is to be calculated when it is doing the maximum of work as determined by Euler's Formula.

6. Find the formula which gives the steering efficacy of the rudder of a ship having headway when the rudder is set at any given angle to the keel of the ship.

7. State the three classes to which all the resistances requiring to be overcome by machines can be reduced, and point out what class comprises the largest number and greatest variety of the useful work requiring to be accomplished.

8. Describe the distinction between friction of sliding and friction of rolling. Describe the simplest mode of experimentally determining the co-efficient of friction between two given rough surfaces, and state the allowance usually made by engineers and in calculations for the friction of a railway train on a well constructed level rail.

9. State the quantities which require to be known in order to calculate the gross horse-power of a steam engine. Explain what is meant by the modulus of an engine and the allowances which are usually found sufficient to obtain the modulus.

10. State the principal distinction between the Cornish pumping engine and the engines by which the reciprocating motion of the piston is converted into rotatory motion by the crank.

11. Describe what is meant by the "pitch of the teeth of wheels." State what determines the designer of a pair of wheels which are to work together in the choice of the pitch when he knows the work the wheels are intended to perform. State what determines him in the number of teeth he is to place on each of the pitch circles; and how, when he has determined the pitch, he determines the diameter of the pitch circle when the number of teeth is known, or that number when the diameter is given.

12. Explain how the epicycloidal teeth are to be formed on a wheel which is intended to drive a given pin-spur wheel with constant velocity ratio during the whole action of each tooth, and show how the curve to which each tooth is to be formed is found from the epicycloid when each pin is made a cylinder of a radius large enough to give it strength sufficient to bear the action of the tooth that drives it.

MIXED MATHEMATICS.

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amination.

1. Suppose it has been proved that the magnitude of the resultant of any two forces acting at any angle on a material particle, is represented by the length of the diagonal of the parallelogram whose sides represent the forces; prove that its direction must be that of the diagonal.

2. Suppose it to have been proved that the diagonal of the rectangle represents the resultant of two forces which act simultaneously on a material particle, in directions which contain a right angle; prove that the diagonal of the parallelogram whose sides represent them represents the resultant when they act in directions which contain any angle.

3. Define the centre of gravity of a heavy body: find the centre of gravity of a thin triangular plate of uniform density; and show that if a free particle in the plane of the three vertical points of a triangle be attracted towards them with forces as the distances from them, it will be in equilibrio under the three actions when placed at the centre of gravity of the triangle.

4. If one set of forces tend to turn a lever in one direction, and another set at the same time to turn it in the contrary direction, state the relation which must subsist between these sets of forces, in order that they may be in equilibrio. Prove what you assert.

5. Prove that the formulæ $v = ft.$ and $S = \frac{1}{2}ft.^2$ How is the motion denominated to which these formulæ apply? What is the motion said to be when $vt = S$ with v invariable in any one case?

6. The accelerating force of gravity being found at the Equator = 32.0881 feet, find the velocity with which a heavy body falling freely there would be moving at the end of the third second from the commencement of its fall; and find the number of feet it would move over in the interval between the third and fourth second.

7. Explain how the centre of gravity of a heavy body may be caused to move in a cycloid whose base is horizontal, and vertex the lowest point of the curve; and prove that the part of its weight which accelerates its motion along the curve is proportionate to its distance from the vertex.

8. Three immovable points, not in the same line, attract a material point left free in their plane with forces continually proportional to its distances from them; find the path of its motion and the law which governs that motion.

9. Give the formula which connects the length of the pendulum, the principal moment of inertia, and the relative position of the centre of gravity and axis of suspension; and from it deduce the convertibility of the centres of oscillation and suspension of the pendulum.

10. Explain the distinction between a sidereal month and a synodic month. Show how the successive monthly phases of the moon are accounted for by her being a spheric body seen by light falling on her from the sun while she is going round the earth in her monthly course. Show whether the cycle of her phases is the sidereal or synodic month.

11. Define the terms "Altitude," "Azimuth," "Declination," and "Right Ascension;" and point out the spherical triangle, by the solution of which the Astronomer can calculate the declination and right ascension of an object whose altitude and azimuth he has taken at an instant noted by his well-regulated sidereal clock; and state what side of that triangle he must have previously determined, and the method of so doing.

12. Explain what opticians mean by the index of Refraction, (1) Absolute, (2) Relative; and explain the best method, or any method, by which these indices are determined.

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amination.

CIVIL ENGINEERING.—*Examiner, Professor James Thomson.*

FIRST YEAR STUDENTS.

GEOMETRICAL DRAWING.

1. Given the traces of a plane, it is required to find the angle which the plane makes with the horizontal plane of projection.
2. Given the projections of a straight line, it is required to find the angle which the line makes with the vertical plane of projection.
3. Given the traces of two planes, it is required to find the projections of the line of intersection of the planes.
4. Given the projections of a right circular cone with axis vertical, and given the horizontal projection of a point on its surface, required the vertical projection of the same point.
5. Supposing there to be given the scale for measurements from a model, show how to construct the scale for its isometric projection.
6. Show how to find a numerical expression for the ratio of the natural or ordinary scale to the isometric scale.
7. Draw accurately an isometric projection of a cube having a circle inscribed on one of its faces.
8. Explain the method of drawing in perspective, when the object and the point of view are given by their horizontal and vertical projections, and the picture surface is a given plane perpendicular to both planes of projection.
9. The perspective of an original straight line lies in the straight line drawn from the "*intersecting point*" to the "*vanishing point*" of that line, or in its continuation past the intersecting point, but not past the vanishing point. Explain and prove this.
10. Given the traces of a plane, and also one of the projections of a straight line in the plane; it is required to find the other projection.
11. Given the traces of a plane, and also one of the projections of any curve in the plane; it is required to find the other projection of the curve.
12. Two common or right cylinders of unequal diameters have their axes intersecting one another at right angles: they are placed with the axes of both parallel to the vertical plane of projection, and with the axis of one parallel to the horizontal plane of projection, the axis of the other being vertical. Show how to draw the vertical projection of their intersection.
13. Draw the projections of a one-inch cube which stands on the horizontal plane of projection, with two faces parallel to the vertical plane of projection, and with a clear space between it and the vertical plane of $1\frac{1}{2}$ inch. Draw its shadow cast on the horizontal plane of projection, taking the light as falling in a direction ordinarily adopted in orthographic drawing. The following line is one inch long 
14. Taking the usual direction for the rays of light, show how to find the vertical projection of the shadow cast on a given vertical cylindric surface by a given thin circular disk placed parallel to the vertical plane of projection.
15. Show how to describe, on true principles, an ellipse with given major and minor axes.
16. Show how to describe approximately an ellipse with given major and minor axes, the circumference being made up of arcs of circles either of two lengths of radii or of three.
17. Show how to find the vanishing point of a slant edge of a roof at the gable end of a house, the house being supposed to be given by its plan and front elevation, with end elevation also if wanted, and the picture

surface being oblique to the vertical plane of projection, and all necessary data (the position of the point of view for instance) being supposed to be known. Appendix,
No. 8.

18. State and explain the special geometrical conditions of the problem of drawing a perspective picture of such portion of a level circle, having numerous radii drawn from centre to circumference, as can be shown on a vertical picture plane, the point of view being vertically above the centre of the circle. The problem is such as would arise if a perspective were to be drawn of part of a large paddle or fly wheel lying flat on its side by an observer standing upright over its centre; the picture surface being vertical as usual. General
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amination.

SECOND YEAR ENGINEERING STUDENTS.

CIVIL ENGINEERING.

1. Two cylindric surfaces in general (not necessarily surfaces of revolution), have the generating straight lines of the one at right angles with those of the other; the cylinders are placed with the straight generatrices of both parallel to the vertical plane of projection, and with those of one parallel to the horizontal plane of projection, those of the other being vertical. Show how to construct the vertical projection of the intersection of the two cylindric surfaces.

2. What is the error in square links per acre in a survey made with a chain which is $1\frac{1}{2}$ inch too long?

3. Give formulæ or rules for finding the content of a pyramid, a cone, and a cylinder, the latter two being of the ordinary kind, that is to say, being solids of revolution.

4. State and explain whether or not a theodolite fully adjusted for an observation by a person of long sight, will require an adjustment for parallax in being used for the same observation by a short-sighted person.

5. When the telescope of a ∇ theodolite or level is made to revolve in its ∇ s a certain line of the telescope retains its position unchanged. State precisely what that line is.

6. In continuation of your answer to the foregoing question, state clearly what is the condition to be brought about in the adjustment of the line of collimation, so that while the telescope is revolving in the ∇ s the intersection of the cross wires may appear not to move on the distant object viewed.

7. Supposing the line of collimation of a ∇ levelling instrument to be already adjusted to its proper position in the telescope, state the practical process for further adjustment of the instrument, so that it may give level sights when the spirit tube attached to the telescope shows the bubble at middle; and demonstrate the truth of the process, pointing out clearly any structural accuracy of the cylindric rings that you may have to assume in your demonstration as having been effected by the instrument maker.

8. Show that in Gravatt's level there is no exact height in the telescope tube at which the horizontal wire ought necessarily to be adjusted, and explain the bearing of this on Gravatt's rules for the adjustment of his instrument.

9. If the object glass of a levelling instrument or theodolite be obscured in part by a cover applied close to it, and leaving only a narrow diametrical slit, or else leaving only a triangular space of the object glass uncovered, how will the field of view, as seen in looking into the instrument in the usual way, be affected by the cover? Also state by what

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amination.

arrangement the field of view could be made to appear square or triangular or of other forms if required.

10. For computation of earthwork along an entire cutting or embankment, whether will the ordinary prismoidal method or the method of "mean areas" give generally more correct results, and why?

11. In the frustum of a pyramid, let the areas of the two parallel faces be A and C , and let the area of a section midway between them and parallel to them be B , and let their distance apart be l . Prove that the content of the frustum is $= (A + 4B + C) \frac{l}{6}$. In your demonstration you

may assume the ordinary rule for finding the content of a pyramid, or any of the ordinary expressions for the content of a prismoid.

12. A section for a railway cutting shows, spaced at intervals of one chain of 66 feet, the following heights of the surface of the ground above the formation line; 13, 17, 21, 27, 34 feet. The "Base" is 30 feet, and slopes are $1\frac{1}{2}$ to 1. Take out by Macneill's Tables the quantity of earth between the first and the last of the given heights.

13. Take out by Bidder's Table the quantity from the same data.

14. Given on the ground two points, A and B , within about two or three chains or so apart, on a railway curve of given radius great compared with the distance AB . Show how to find by aid of a tangent, and how by aid of a chord, a point on the curve between A and B at a given distance from A .

15. In passing from a straight line of railway into a circular curve, why is it objectionable to have the straight part simply tangential to the circular part, and preferable to introduce the curvature gradually?

16. In the ranging of railway curves, how may the process in any of the ordinary cases be slightly modified, so as to effect the easing off of the transition from the straight line into the curve of the required radius?

SECOND YEAR STUDENTS.

OFFICE AND FIELD WORK.

1. Give an example explaining clearly any form of field level book which you can use, and showing the mode of using it.

2. If any given surface of revolution, in general, be cut by a plane parallel to its axis, and at a given distance from the axis, show how the curve of the section may be drawn: or, what is the same, show how its projection on a plane of projection taken parallel to the cutting plane may be drawn.

SECOND AND THIRD YEAR STUDENTS.

3. By use of Tables furnished to you, compute the area of a triangle having its sides 3120 links, 2754 links, and 1967 links; and give the result in square links.

4. In a triangle which may be denoted as ABC , with a split line AD , the following lengths have been noted as measurements made on the ground: $AB = 2994$, $AC = 1212$, $BC = 3592$, $AD = 1053$, $BD = 2392$. Check the measured lengths of the three sides as to whether they be accurate or not.

5. Calculate the numbers in Bidder's Table of Earthworks, for two end heights of 18 and 26 feet; and explain accurately what those numbers mean.

6. In ranging a curve by the method of angles at the circumference, with some points of the curve determined on the ground by means of a transversal, if you have ranged and pegged a portion of the curve with

the theodolite at one station, and it becomes necessary to move the theodolite to another station on the curve; how do you arrange the theodolite at the new station to give the proper readings for the additional pegs which may be ranged by sights taken from that new station? In answering this you should take into consideration that the commencement of the curve, as also the end of the curve, may, or may not, be visible from the new theodolite station.

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amination.

7. In marking out the half-breadths for a railway on the usual method by successive approximations (as has been taught in the Second Year Lecture Course), what, in the search for a point to be marked on the ground as belonging to the required edge of the slope, is the condition to be aimed at, which, on being attained, proves that the point on the ground accomplishing it is a point of the required edge of the slope?

8. Show how it is that in following the method of setting out half-breadths referred to in the foregoing question, each shift of the trial point, resulting from the measurement and calculation for attaining a closer approximation, falls short of the true required amount of shift at the side of the ground rising from the centre peg, and that it is in excess of the true shift on the descending side; or briefly, in other words, show that were we to follow precisely the calculated correction of each approximate point, we would underdo the correction on the side ascending from the centre line, and would overdo it on the side descending from the centre line.

THIRD YEAR STUDENTS.

9. Explain, in respect to designs for an oblique bridge, what is meant by the corrected or adjusted angle of skewback of the intrado; or, in other words, what is meant by the adjusted angle of the intradosal coursing spiral; and give the corresponding explanation as to the extradosal coursing spiral; and show clearly, by the aid of diagrams, how the correction or adjustment is made in each case.

10. Explain what is meant by the "eccentricity" in regard to the radiating joints in the face of an oblique bridge. Also give an outline of the chief steps of a proof of the principle according to which these joints may be drawn radiating from one point.

THIRD YEAR ENGINEERING STUDENTS.

CIVIL AND MECHANICAL ENGINEERING.

1. If in drawing up a specification for a contract for supplying large pipes for water works, you should wish to follow mainly an example of a specification of that description, submitted to you in the course of the present Session, what would be, so far as you can state from recollection, the nature of the chief clauses you would insert, as to testing from time to time the metal of which the pipes are being cast; as to the manner of casting; as to freedom from blemishes and inaccuracies in the castings; and as to testing or proving the pipes when cast.

2. Describe the following varieties of water pumps:—

- (a) Pump with piston or "bucket," with valve in the piston.
- (b) Double acting piston pump.
- (c) Plunger pump without piston.
- (d) Plunger pump with piston bearing a valve, the area of the piston being about double that of the cross section of the plunger.

3. Specify what is "*the British absolute unit of force*" as fixed in accordance with the principles of Gauss, the avoirdupois pound of matter being taken as the unit of mass. Also state what is the weight in pounds

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of a unit of mass in the ordinary, but not quite precise or consistent system of designation of quantities of matter, and of quantities of force.

4. In Oblique Bridge building ;—for finding the angle to which to set the bevel gauge for marking on the soffit of a face stone the line of edge of the soffit where terminating at the oblique face, Buck directs that a full size development of a strip of the soffit edged by its line of meeting with the oblique face of the arch, be laid down on a platform. Can you show reason in favour of or against following this method ?

5. In reference to passing from results obtained as to stiffness and strength from a large model of a bridge made with beams or girders, to the results which may be expected from a similar structure in full size, state and prove what would be the ratio of the deflexions of two beams similar in form, having the several linear dimensions of the one to the corresponding linear dimensions of the other as m to n , and supported at their extremities, and having each only to bear its own weight (or the deflexions in question being simply those due to the weights of the beams), and neither being strained at any part beyond what may practically be considered as its elastic limit.

6. Show, in respect to the similar beams of different dimensions described in the foregoing question, what is the ratio of $\frac{\text{breaking load}}{\text{actual load}}$ in the one beam, to $\frac{\text{breaking load}}{\text{actual load}}$ in the other beam.

7. How does the strength of a round bar of iron to resist set or rupture by torsion, vary with the diameter of the bar ? Give a demonstration with your answer.

8. How does the stiffness of a round bar of iron to resist twisting (or angular yielding by torsion) vary with the diameter and the length, the deformation not being carried beyond what may be practically considered as the limit of elasticity ? Give a demonstration with your answer.

9. Explain what is meant by the *hydraulic mean depth*, and *wetted perimeter*, of a pipe or canal for conveying water.

10. What is the content, in cubic feet, of the Standard or Reduced Rod used in England in the designation of quantities of brickwork ; and what the content, in cubic feet, of the perch of brickwork commonly used in Ireland ; and what of the perch of masonry also used in Ireland ?

11. A wire of such size that 25 feet of it weigh 1 pound, is suspended as a festoon between two posts 600 feet apart, the points of bearing on the posts being on a level with each other ; and the wire is tightened until it comes to sag only 20 inches at the middle below the level of its ends. What is the pull to which the wire is subjected at the lowest point ? Show also that the pull would be nearly the same throughout the length of the wire.

12. Find the moment of inertia of a rectangle round an axis passing through its centre and parallel to a pair of its sides.

13. Find the moment of inertia of a circular area round its diameter.

14. What is meant by the Modulus of Elasticity of a material.

15. Prove that in a beam subjected to cross strain, its stiffness to resist a given amount of bending (or angular yielding per unit of length) within limits of Elasticity is proportional to the product IE where I is the moment of inertia of its cross section round its neutral axis passing through its centre of gravity, and E is the Modulus of Elasticity of the material : or that $Mr = IE$; where M is the moment of the bending couple at the part of the beam considered, and r the radius of the curvature it has received in the bending.

16. Name the successive styles of the Gothic Architecture of England, and give a brief description of each, as to its character and the period of its prevalence.

17. Explain the meanings of the following terms in Architecture:—
Scotia, Dentels, Apophyge, Ogee, Entablature, Frieze, Architrave, Crockets, Mullion, Transom.

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18. Draw a sketch of the Tuscan column, and another of the Roman Doric column, and annex the names to the several parts or mouldings. The sketches will suffice if they show about half the column on one side of the centre line.

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amination.

19. Explain what is meant by the contraction of the vein in water issuing from an orifice: and distinguish between the two kinds of contraction which occur in a vein or stream of water flowing from an open notch in a vertical thin plate; one being where the water leaves the edges of the notch, and the other being along the upper surface of the water.

20. When water flows from a water pipe under a street up to a high story of a house, and there issues briskly into a cistern; the water is said in its transit from the one place to the other to have made a *rise in elevation*, or an *absolute rise*, but a *virtual fall*; or more precisely it is said that a change has occurred, not identical with, but equivalent to, or virtually represented by a certain fall of a certain quantity of water. Explain this fully: and, in doing so, you may consider the two cases;—1st, in which the water in the pipe under the street has the full pressure due to the water level in the reservoir at the pipe head; and, 2nd, in which, owing to the general flow to numerous outlets throughout the town, the water in the pipe under the street has a less pressure by a definite amount than that due to the height of the water surface in the reservoir.

NATURAL HISTORY.—*Examiner, Professor Wyville Thomson.*

BOTANY.

1. Describe the flower, indicating the adhesions and cohesions of its parts, in a calycifloral exogen.

2. Describe the inflorescence, the flower, and the fruit of one of the Umbelliferae.

3. Give the structure of a Drupe and of a Pome, and state the natural order in which both forms of fruit are frequent.

4. Describe, in minute detail, the structure of a vegetable cell in a growing point.

5. Give the characters of the natural order Orchidaceae.

6. Describe the structure of the flower in any grass.

7. Describe the reproductive organs of any flowering plant, and contrast them in detail with those of a Fern.

8. Describe the mode of propagation by "conjugation" in the lower Algae.

9. Describe the structure, mode of formation, and functions of the Laticiferous Vessels.

CHEMISTRY.—*Examiner, Dr. Andrews.*

PRACTICAL CHEMISTRY.

1. What are the distinguishing tests for potash, soda, and ammonia?

2. How would you analyse a mixture of phosphate of lime and phosphate of magnesia?

3. Describe the method of analysing an alloy of copper and zinc.

4. How is the amount of chloride of sodium in a solution accurately determined by the silver method?

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amination.

5. Give an account of the uranum process for determining the amount of phosphoric acid in urine.
6. Describe in detail the fermentation test for sugar, and show how it may be applied to the determination of the quantity of sugar in a liquid.
7. Describe the action of solutions of the different varieties of sugar upon polarised light.
8. What are the chief properties of urea, and, in particular, what are its reactions with the salts of mercury?
9. How would you test for the presence of the following bodies in blood: viz.,—sugar, urea, bile, fat?

Matricula-
tion Ex-
amination.

MATRICULATION EXAMINATION.—OCTOBER, 1866.

MATHEMATICS.—*Examiner, Professor Purser.*

ARITHMETIC.

1. Find the present value of a bill for £1157 5s. due in five months, discount being $6\frac{1}{2}$ per cent. per annum.
2. If seven men earn £4 5s. 9d. in seven days, how many men, at the same wages, will earn £16 7s. 3d. in eleven days?

3. Which is greater $\frac{1}{2} + \frac{1}{7}$ or $\frac{1}{3} + \frac{1}{4}$ and how much?

Reduce $\frac{186416}{27572}$ to its lowest terms.

4. Prove the rule for the multiplication of decimals.

Calculate $\frac{(11.794)(.0057)}{22.53}$ to five places.

5. Find the length of the diagonal of a square garden which contains 1000 square yards.

EUCLID.

1. Bisect a given rectilineal angle.
2. If two triangles have two angles of the one respectively equal to two angles of the other, and the sides adjacent to these angles equal, the triangles are equal in all respects.
3. In any triangle, the square of the side subtending an acute angle, is less than the sum of the squares of the sides containing that angle, by twice the rectangle contained by either of those sides, and the straight line intercepted between the perpendicular let fall on it from the opposite angle, and the acute angle.

ALGEBRA.

1. If $\frac{a-by}{c+dy} = \frac{a+bv}{c-dx}$ find $\frac{x}{y}$

2. Multiply x^2+2x+1 by x^2-2x+1 and divide

$$\left(\frac{x}{y} + \frac{y}{x}\right)^2 + \left(\frac{x}{z} + \frac{z}{x}\right)^2 - 4 \text{ by } \frac{y}{z} + \frac{z}{y}$$

3. Solve the following equations:

$$(a) \quad 11(x-7)=9(5-x)$$

$$(\beta) \quad \frac{1}{x-1} + \frac{1}{x-3} = \frac{1}{x-2} + \frac{1}{x}$$

$$(\gamma) \quad 5 \left[5 - 4 \left\{ x + \frac{3}{5}(2-x) \right\} \right] = 1$$

$$(\delta) \quad \sqrt{x-a} + \sqrt{x-\beta} = \sqrt{a-\beta}$$

PEEL PRIZES IN GEOMETRY.—*Examiner, Professor Purser.*

Appendix,
No. 8.

Matricula-
tion Ex-
amination.

1. Describe an isosceles triangle having each of the base angles double the vertical angle.
2. A straight line drawn through the intersection of two tangents to a circle is cut harmonically by the circle and the chord of contact.
3. Describe a circle touching three given circles.
4. Find a point such that the sum of its distances from three given points may be the least possible.
5. The rectangle under the diagonals of a quadrilateral can never be greater than the sum of the rectangles under the opposite sides.
6. Find the locus of a point such that the ratio of the tangents drawn from it to two given circles may be constant.
7. From a fixed point O , a variable line OP is drawn to meet a given circle and cut in a point Q , so that $OP \cdot OQ = \text{constant}$; find the locus of Q .
8. If the corresponding pairs of sides of two triangles, produced if necessary, meet in three points lying in one right line, the lines joining corresponding vertices pass through a common point.
9. Find the locus of a point such that, if perpendiculars be let fall from it on the sides of a given triangle, the triangle formed by joining their feet may be isosceles.
10. Two circles, each touching a given line at a given point, touch each other; find the locus of the point of contact.

SCHOLARSHIP EXAMINATIONS.—OCTOBER, 1866.

Scholarship
Examina-
tions.

LITERARY SCHOLARSHIPS.—FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I.—Translate these lines from the fourth book of the *Iliad*:—

ὥς δ' ὅτ' ἐν αἰγιαλῷ³ πολυηχέϊ κῦμα θαλάσσης
 ὄρνυτ' ἐπασσύτερον³ Ζεφύρου ὑποκινήσαντος,—
 πόντῳ μὲν τε¹ πρῶτα κορύσσεται,² αὐτὰρ ἔπειτα
 χέρσῳ ῥηγνύμενον μεγάλα βρέμει, ἀμφὶ δέ τ' ἄκρας
 κυρτὸν ἰὸν κορυφοῦται ἀποπτύει θ' ἄλός ἄχνην,—
 ὥς τότ' ἐπασσύτεραι Δαναῶν κίνυντο φάλαγγες
 νωλεμέως³ πόλεμόνδε.¹ κέλευε δὲ οἷσι ἕκαστος
 ἡγεμόνων· οἱ δ' ἄλλοι ἀκὴν³ ἴσαν—οὐδέ κε φαίης
 τόσσον λαὸν ἔπεσθαι ἔχοντ' ἐν στήθεσιν αὐδὴν—
 σιγῇ δειδιότες¹ σημάντορας· ἀμφὶ δὲ πᾶσιν
 τεύχεα ποικίλ' ἔλαμπε, τὰ εἰμένοι ἐστιχόωντο.
 Τρώες δ'—ὥστ' οἷες πολυπάμονος³ ἀνδρὸς ἐν αὐλῇ³
 μυρίαί ἐστήκασιν—ἀμελγόμεναι γάλα λευκόν—
 ἀζηχὲς³ μεμακνῖαι,¹ ἀκούουσαι ὅπα ἄρνων,¹
 ὥς Τρώων ἀλαλητὸς ἀνὰ στρατὸν εὐρὺν ὀρώρει¹
 οὐ γὰρ πάντων ἦεν¹ ὁμὸς θρόος οὐδ' ἰα¹ γῆρυς,
 ἀλλὰ γλῶσσ' ἐμέμικτο, πολύκλητοι³ δ' ἔσαν ἄνδρες.
 ὦρσε δὲ τοὺς μὲν Ἄρης, τοὺς δὲ γλαυκῶπις Ἀθήνη

* * * * *

Appendix,
No. 8.

Scholarship
Examina-
tions.

Δεῖμός τ' ἡδὲ Φόβος καὶ Ἔρις ἄμοτον² μεμανῖα,¹
[Ἄρεος ἀνδροφόνου κασιγνήτη³ ἑτάρῃ τε,]
ἦτ'¹ ὀλίγη μὲν πρῶτα κορύσσεται, αὐτὰρ ἔπειτα
οὐρανῷ ἐστήριξε³ κάρη³ καὶ ἐπὶ χθονὶ βαίνει.
ἦ' σφιν¹ καὶ τότε νεῖκος ὁμοῖον ἔμβαλε μέσσω
ἐρχομένη καθ' ὁμίλον, ὀφέλλουσα στόνον ἀνδρῶν.
οἱ δ', ὅτε δὴ ῥ' ἐς χῶρον ἕνα ξυνιόντες ἵκοντο,
σύν ῥ' ἔβαλον ῥινοὺς σὺν δ' ἔγχεα καὶ μένε' ἀνδρῶν
χαλκεοθωρήκων· ἀτὰρ ἄσπίδες ὀμφαλόεσσαι
ἔπληντ'¹ ἀλλήλησι, πολὺς δ' ὀρυμαχδὸς² ὀρώρει.
ἔνθα δ' ἡμ' οἰμωγὴ τε καὶ εὐχολὴ πέλεν¹ ἀνδρῶν
ὀλλύντων τε καὶ ὀλλυμένων, ῥέε δ' αἵματι γαῖα.
ὥς δ' ὅτε χεῖμαρροι³ ποταμοὶ κατ' ὄρεσφι¹ ῥέοντες
ἐς μισγύγκειαν³ συμβάλλετον³ ὀμβριμον³ ὕγρω
κρουνῶν ἐκ μεγάλων κοίλης ἔντοσθε χαράδρης,
τῶν δέ τε¹ τηλόσε δοῦπον ἐν οὖρεσιν ἔκλυε ποιμήν,
ὥς τῶν μισγομένων γένετο ἰαχὴ τε πόνος τε.

II.—1. Parse accurately every word to which the figure (1) is attached.

2. Derive or decompound every word to which the figure (2) is attached.

3. Account for the tense of ἐστήριξε and ἔκλυε, and for the number of συμβάλλετον.

4. If any illicit *hiatus* or other metrical difficulties occur in the lines as above printed, how may they be obviated?

I.—Translate the following passage:—

Σοφοκλῆς ἐδιδάχθη τὴν μουσικὴν παρὰ Λάμπρῳ, καὶ μετὰ τὴν ἐν Σαλαμίτι ναυμαχίαν, Ἀθηναίων περὶ τρόπαιον ὄντων, μετὰ λύρας γυμνὸς ἀληλιμμένος τοῖς παιανίζουσι τῶν ἐπινικίων ἐξῆρχεν. παρ' Αἰσχύλῳ δὲ τὴν τραγῳδίαν ἔμαθε, καὶ πολλὰ ἐκαινούργησεν ἐν τοῖς ἀγῶσι, πρῶτον μὲν καταλύσας τὴν ὑπόκρισιν τοῦ ποιητοῦ διὰ τὴν ἰδίαν μικροφωνίαν (πάλαι γὰρ καὶ ὁ ποιητὴς ὑπεκρίνετο), αὐτοὺς δὲ τοὺς χορευτὰς ποιήσας ἀντὶ ἰβ' ἰέ, καὶ τὸν τρίτον ὑποκριτὴν ἐξευρών. φασὶ δ' ὅτι καὶ κιθάραν ἀναλαβὼν ποτε ἐκιθάρισεν, ὅθεν καὶ ἐν τῇ ποικίλῃ Στοᾷ μετὰ κιθάρας αὐτὸν γεγράφθαι. Σάτυρος δὲ φησιν ὅτι καὶ τὴν καμπύλην βακτηρίαν αὐτὸς ἐπενόησεν. φησὶ δὲ καὶ Ἰστρος τὰς λευκὰς κρηπῖδας αὐτὸν ἐξευρηκέναι, ὥς ὑποδοῦνται οἱ τε ὑποκριταὶ καὶ οἱ χορευταί, καὶ πρὸς τὰς φύσεις αὐτῶν γράφαι τὰ δράματα, ταῖς δὲ Μούσαις θίασον ἐκ τῶν πεπαιδευμένων συναγαγεῖν.

II.—Translate in Attic Greek the following sentences, or as many of them as you can, marking the accentuation:—

1. About my private affairs let this preface suffice.
2. Come let me try to defend myself before you more persuasively than I did before my judges.
3. Do not be surprised if I eagerly attempt to instruct you.
4. Concerning his integrity in money-matters what stronger proofs could one have than the following?
5. We are about to go against great cities not likely to accept our rule in place of liberty.
6. 'Would'—

said I—'that he had taken part in that expedition with greater spirit!'
 7. It were far better to repeal our present laws and enact others which
 should visit with their penalties such as defend their own property. 8. *Appendix, No. 8.*
 What will become of the state, if anyone who chuses shall be allowed to
 kill another before publicly declaring for what purpose he is come? 9. *Scholarship Examinations.*
 If he had then entertained the opinion that it is difficult to oppose them,
 he would have done nothing of what he has now accomplished. 10. To
 me it seems a greater loss and disgrace not to retain these effects now
 than not to have taken them then, in the same proportion as it is harder
 for a rich man to become poor than it is never to have been rich at all.

LATIN.—*Examiner, Professor William Nesbitt, M.A.*

Translate :—

1. Paulum sepultae distat inertiae
 Celata virtus. Non ego te meis
 Chartis inornatum silebo,
 Totve tuos patiar labores
 Impune, Lolli, carpere lividas
 Obliviones. Est animus tibi
 Rerumque prudens et secundis
 Temporibus dubiisque rectus,
 Vindex avarae fraudis et abstinens
 Ducentis ad se cuncta pecuniae,
 Consulque non unius anni,
 Sed quoties bonus atque fidus
 Iudex honestum praetulit utili,
 Reiecit alto dona nocentium
 Vultu, per obstantes catervas
 Explicuit sua victor arma.
 Non possidentem multa vocaveris
 Recte beatum ; rectius occupat
 Nomen beati, qui deorum
 Muneribus sapienter uti
 Duramque callet pauperiem pati,
 Peiusque leto flagitium timet,
 Non ille pro caris amicis
 Aut paria timidus perire.

HOR. Odes.

- (a) What is known of the Lollius here addressed ?
- (β) Analyze the sentence—*Est animus . . . arma.*
- (γ) How has Horace elsewhere expressed the idea conveyed in *consul non unius anni* ?
- (δ) Express *per obstantes . . . arma* in unmetaphorical language.
 Give the prose word for *explicuit*. State the primary and derivative meanings of *rectus* and *callet*, and mention the different constructions which the latter admits.

2. Nondum tradideras victas victoribus artes,
 Graecia ; facundum, sed male forte genus.
 Qui bene pugnat, Romanam noverat artem :
 Mittere qui poterat pila, disertus erat.
 Quis tunc aut Hyadas, aut Pleiadas Atlanteas
 Senserat, aut geminos esse sub axe polos ?

Appendix,
No. 8.

Scholarship
Examina-
tions.

Esse duas Aretos ; quarum Cynosura petatur
Sidoniis, Helicen Graia carina notet ?
Signaque quae longo Frater percenseat anno,
Ire per haec uno mense Sororis equos ?
Libera currebant, et inobservata per annum
Sidera : constabat sed tamen esse Deos.
Non illi coelo labentia signa movebant ;
Sed sua : quae magnum perdere crimen erat.
Illaque de fœno. Sed erat reverentia fœno,
Quantam nunc aquilas cernis habere tuas.
Pertica suspensos portabat longa maniplos :
Unde manipularis nomina miles habet.
Ergo animi indociles et adhuc ratione carentes,
Mensibus egerunt lustra minora decem.

OVID, *Fasti*.

(a) How has Horace expressed the idea—*Nondum tradiderat victas*, etc. ?

(β) Illustrate the use of *male* in the expression, *male forte*.

3.

Ille retorto

Paeonium in morem senior succinctus amictu,
Multa manu medica Phœbique potentibus herbis
Nequidquam trepidat, nequidquam spicula dextra
Sollicitat, prensatque tenaci forcipe ferrum.
Nulla viam Fortuna regit, nihil auctor Apollo
Subvenit ; et saevus campis magis ac magis horror
Crebrescit, propiusque malum est. Iam pulvere coelum
Stare vident, subeuntque equites, et spicula castris
Densa cadunt mediis ; it tristis ad aethera clamor
Bellantum invenum et duro sub Marte cadentum.
Hic Venus, indigno nati concussa dolore,
Dictamnū genetrix Oretaea carpsit ab Ida,
Puberibus caulem foliis et flore comantem
Purpureo : non illa feris incognita capris
Gramina, quum tergo volucres haesere sagittae.
Hoc Venus, obscuro faciem circumdata nimbo,
Detulit : hoc fuscum labris splendentibus amnem
Inficit, occulte medicans, spargitque salubres
Ambrosiae succos et odoriferam panaceam.
Fovit ea vulnus lymp̄ha longaevis Iapis
Ignorans, subitoque omnis de corpore fugit
Quippe dolor, omnis stetit imo vulnere sanguis ;
Iamque secuta manum nullo cogente sagitta
Excidit, atque novae rediere in pristina vires.

VIRG., *Æn.*

Translate :

Sequitur aliud in urbe nefas ab libidine ortum haud minus foedo eventu, quam quod per stuprum caedemque Lucretiae urbe regnoque Tarquinius expulerat, ut non finis solum idem decemviris, qui regibus, sed causa etiam eadem imperii amittendi esset. Ap. Claudium virginis plebeinae stuprandae libido cepit. pater virginis L. Verginius honestum ordinem in Algidio ducebat, vir exempli recti domi militiaeque. perinde uxor instituta fuerat liberique instituebantur. desponderat filiam L. Icilio tribunicio, viro acri et pro causa plebis expertae virtutis. hanc virginem adultam forma excellentem Appius amore ardens pretio ac spe perlicere

adortus, postquam omnia pudore saepta animadveterat, ad crudelem superbamque vim animum convertit. M. Claudio clienti negotium dedit, ut virginem in servitutem adsereret, neque cederet secundum libertatem postulantibus vindicias, quod pater puellae abesset locum iniuriae esse ratus. virgini venienti in forum—ibi namque in tabernis litterarum ludi erant—minister decemviri libidinis manum iniecit, serva sua natam servamque appellans esse sequique se iubebat, cunctantem vi abstracturum. pavidam puella stupente ad clamorem nutricis fidem Quiritium implorantis sit concursus. Verginii patris sponsique Iciliii populare nomen celebrabatur. notos gratia eorum, turbam indignitas rei virgini conciliat. iam a vi tuta erat, cum adsertor nihil opus esse multitudine concitata ait: se iure grassari non vi. vocat puellam in ius, auctoribus qui aderant ut sequeretur. ad tribunal Appii perventum somnotam iudici fabulam petitor, quippe apud ipsum aucto ter argumenti, peragit: puellam domi suae natam furtoque inde in domum Verginii translatam suppositam ei esse; id se indicio compertum adferre probaturumque vel ipsu Verginio iudice, ad quem maior pars iniuriae eius pertineat; interim dominum sequi ancillam aequum esse. advocati puellae, cum Verginium rei publicae causa dixissent abesse, biduo adfuturum, si nuntiatum ei sit: iniquum esse absentem de liberis dimicare; postulant, ut rem integram in patris adventum differat, lege ab ipso lata vindicias det secundum libertatem, neu patiatur virginem adultam famae prius quam libertatis periculum adire.—LIVY.

Appendix,
No. 8.
Scholarship
Examina-
tions.

1. What was the designation of an action with reference to personal freedom? Describe the form of legal process, and explain the terms *lis*, *vindicte praes*, *sacramentum*, *assertor*, *vindex*, *advocatus*.

2. Give the full title of the decemvirs, and relate the circumstances which led to the institution of the decemvirate.

3. What was the origin of the *provocatio*? Mention, with dates, the enactments by which it was secured.

Translate into Latin prose:—

There is not, in my opinion, a consideration more effectual to extinguish inordinate desires in the soul of man, than the notions of Plato and his followers upon that subject. They tell us, that every passion which has been contracted by the soul during her residence in the body remains with her in a separate state; and that the soul in the body, or out of the body, differs no more than the man does from himself, when he is in his house, or in open air. When, therefore, the obscene passions have once taken root, and spread themselves in the soul, they cleave to her inseparably, and remain in her for ever, after the body is cast off and thrown aside.

LATIN GRAMMAR.

1. State and exemplify the rules for writing names of places to or from which motion is expressed.

2. State accurately the rules for the sequence of the tenses in dependent sentences.

3. What changes of mood take place when the direct is changed into the indirect style?

4. Explain the anomalies of construction in the following sentences:—

Decem pondo auri et argenti ad summam sestertii in aerarum retulit.
Paterae aureae fuerunt ducentae septuaginta sex libras ferme omnes pondo.

5. Explain the use of the tenses in the following specimen of epistolary

Appendix, No. 8. writing, and state the circumstances upon which mainly its peculiarity depends :—

Scholarship Examinations. Etsi nihil habebam novi, quod post accidisset quam dedissem ad te Philogeni litteras, tamen quum Philotimum Romam mitterem, scribendum aliquid ad te fuit.

HISTORY AND THE ENGLISH LANGUAGE.—*Examiner, Professor Yonge.*

1. Write a short essay on the discoveries of the 15th, and those of the 19th century, comparing them in the influence they have had, or may be expected to have, on civilisation.

2. In the Etymology of the English Language, what is composition? and, in compound words, what is the influence which either portion has on the other? Give instances.

3. In Roman History give an account of the Constitution of Servius Tullius.

4. In Greek History give an account of the circumstances which led to the Execution of the Six Athenian Generals, B.C. 406.

5. In English History explain the foundation on which Henry VII. claimed a hereditary right to the crown.

6. Give a sketch of the different real or pretended plots in the reign of Charles II.

SECOND YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

Translate perspicuously the following extract from the *Phædon* of PLATON :—

καὶ ὅλην μὲν δὴ τὴν γῆν οὕτω πεφυκέναι καὶ τὰ περὶ τὴν γῆν· τόπους δ' ἐν αὐτῇ εἶναι κατὰ τὰ ἐγκοίλα αὐτῆς κύκλῳ περὶ ὅλην πολλούς, τοὺς μὲν βαθυτέρους καὶ ἀναπεπταμένους μᾶλλον ἢ ἐν ᾧ ἡμεῖς οἰκοῦμεν, τοὺς δὲ βαθυτέρους ὄντας τὸ χάσμα ἑλαττον ἔχειν τοῦ παρ' ἡμῖν τόπου, ἔστι δ' οὗς καὶ βραχυτέρους τῷ βάθει τοῦ ἐνθάδε εἶναι καὶ πλατυτέρους. τούτους ἔτι πάντας ὑπὸ γῆν εἰς ἀλλήλους συντετρησθαι τε πολλυχῇ κατὰ στενώτερα καὶ εὐρύτερα, καὶ διεόδους ἔχειν, ἥ πολὺ μὲν ὕδωρ ρεῖν ἐξ ἀλλήλων εἰς ἀλλήλους ὥς περ εἰς κρατῆρας, καὶ ἀενάων ποταμῶν ἀμήχανα μεγέθη ὑπὸ τὴν γῆν καὶ θερμῶν ὑδάτων καὶ ψυχρῶν, πολὺ δὲ πῦρ καὶ πυρὸς μεγάλους ποταμούς, πολλοὺς δὲ ὕγρου πηλοῦ καὶ καθαρωτέρου καὶ βορβορωδεστέρου, ὥς περ ἐν Σικελίᾳ οἱ πρὸ τοῦ ῥύακος πηλοῦ ῥέοντες ποταμοὶ καὶ αὐτὸς ὁ ῥύαξ· ὧν ἢ καὶ ἐκάστους τοὺς τόπους πληροῦσθαι, ὧν ἂν ἐκάστοις τύχῃ ἐκάστοτε ἢ περιφρόῃ γιγνομένη. ταῦτα δὲ πάντα κινεῖν ἄνω καὶ κάτω ὥς περ αἰώραν τινὰ ἐνοῦσαν ἐν τῇ γῇ. ἔστι δὲ ἄρα αὕτη ἡ αἰώρα διὰ φύσιν τοιάνδε τινα· ἐν τι τῶν χασμάτων τῆς γῆς ἄλλως τε μέγιστον τυγχάνει ὃν καὶ διαμπερές τετρημένον δι' ὅλης τῆς γῆς, τοῦτο δ' περ "Ὀμηρος εἶπε, λέγων αὐτὸ

τῆλε μάλ', ἧχι βάθιστον ὑπὸ χθονός ἐστι βέρεθρον·

ὃ καὶ ἄλλοι καὶ ἐκεῖνος καὶ ἄλλοι πολλοὶ τῶν ποιητῶν Τάρταρον κεκλήκασι. εἰς γὰρ τοῦτο τὸ χάσμα συρρέουσί τε πάντες οἱ ποταμοὶ καὶ ἐκ τούτου πάλιν ἐκρέουσι· γίγνονται δὲ ἕκαστοι τοιοῦτοι δι' οἷας ἂν καὶ τῆς γῆς ῥέωσιν. ἢ δ' αἰτία ἐστὶ τοῦ ἐκρεῖν τε ἐντεῦθεν καὶ εἰσερεῖν πάντα τὰ ῥεύματα, ὅτι πυθμένα

οὐκ ἔχει οὐδὲ βάσιν τὸ ὑγρὸν τοῦτο. αἰωρεῖται δὲ δὴ καὶ κυμαίνει ἄνω καὶ *Appendix,*
κάτω. καὶ ὁ ἀὴρ καὶ τὸ πνεῦμα τὸ περὶ αὐτὸ ταυτὸν ποιεῖ· *No. 8.*
αὐτῷ, καὶ ὅταν εἰς τὸ ἐπ' ἐκεῖνα τῆς γῆς ὁρμήσῃ καὶ ὅταν εἰς τὸ ἐπὶ τάδε, καί, *Scholarship*
ὥς περ τῶν ἀναπνεόντων ἀεὶ ἐκπνεῖ τε καὶ ἀναπνεῖ ῥέον τὸ πνεῦμα, οὕτω καὶ *Examina-*
ἐκεῖ ξυναιωρούμενον τῷ ὑγρῷ τὸ πνεῦμα δεινούς τινας ἀνέμους καὶ ἀμηχάνους *tions.*
παρέχεται καὶ εἰσιὸν καὶ ἐξιόν.

You may elucidate any obscurity in the above discussion, and indicate the main objection raised by Aristoteles.

I.—Translate perspicuously the annexed extracts from the *Andromache* of EURIPIDES :—

1.

ῖ μεγάλων ἀχέων ἄρ' ὑπῆρξεν, δὲ Ἰδαίαν *στρ. α.*
εἰς νάπαν ἦλθ' ὁ Μαίας τε καὶ Διὸς τόκος
τρίπῳλον ἄρμα δαιμόνων ἄγων τὸ καλλιζυγές
ἔριδι στυγερά κεκορυθμένον εὐμορφίας
σταθμούς ἐπι βούτα
βοτῆρά τ' ἀμφὶ μονότροπον νεανίαν
ἔρημόν θ' ἐστιοῦχον αὐλάν.
ταὶ δ' ἐπεὶ ὑλόκομον νάπος ἦλυθον οὐρεῖαν *ἀντιστρ. α.*
πιδᾶκων νίψαν αἰγλᾶντα σώματ' ἐν ῥοαῖς
ἔβαν τε Πριαμίδαν ὑπερβολαῖς λόγων εὐσφρόνων
παραβαλλόμεναι Κύπρις εἴλε λόγους δούλοις
τερπνοῖς μὲν ἀκοῦσαι
πικρὰν δὲ σύγχυσιν βίου Φρυγῶν πόλει
ταλαίνα περγάμοις τε Τροίας.
ἀλλ' εἴθ' ὑπὲρ κεφαλὰν ἔβαλεν κακὸν *στρ. β'.*
ἀ τεκοῦσά νιν Πάριν
πρὶν Ἰδαῖον κατοικίσαι λέπας!
οὕτᾱν ἐπ' Ἰλῖασι ζυγὸν ἦλυθε *ἀντιστρ. β'.*
δούλιον, σύ τ' ἄν, γύναι,
τυράννων ἔσχεθες ἄν ἰόμων ἔωρας.

2.

οὐ ποτ' ἐγὼ δίδυμα λέκτρ' ἐπαινέσω βροτῶν *στρ. α.*
οὐτ' ἀμφιμάτορας κόρους,
ἐρίσματ' οἴκων δυσμενεῖς τε λύπας.
μίαν μοι στεργέτω πύσις
γάμοις ἀκοινώνητον ἀνδρὸς εὐνάν.
οὐδὲ γὰρ ἐν πόλεσι δίπτυχοι τυραννίδες *ἀντιστρ. α.*
μιᾶς ἀμείνονες φέρειν,
ἄχθος ἐπ' ἄχθει καὶ στάσις πολίταις.
τόνων δ' ὕμνου συνεργάταιν
δυοῖν ἔριν Μοῦσαι φιλοῦσι κραίνειν.
πνοαὶ δ' ὅταν φέρωσι ναυτίλους θαλά *στρ. β'.*
κατὰ πηδαλίω διδυμαι πραπίδων γνῶμαι

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tions.

σοφῶν τε πλῆθος ἄθρόον ἀσθενέστερον
 φαυλοτέρας φρενὸς αὐτοκρατοῦς
 ἐνὸς ἃ δύνασις ἀνὰ τε μέλαθρα κατὰ τε πόλιας
 ὁπόταν εὐρεῖν θέλωσι καιρόν.
 ἔδειξεν ἡ Λάκαινα τοῦ στρατηλάτα
 Μενέλα· διὰ γὰρ πυρὸς ἦλθ' ἐτέρῳ λέχει,
 κτείνει δὲ τὴν τάλαιναν Ἰλιάδα κύραν
 παῖδά τε δύσφρονος ἔριδος ὕπερ.
 ἄθεος, ἄνομος, ἄχαρις ὁ φόνος. ἔτι σε πότνια
 μετατροπὰ τῶνδ' ἔπεισιν ἔργων.

ἀντιστρ. β.

II.—1. Emend the text of both passages, so as to eliminate incongruities in sense, construction, and versification.

2. In regard to the first *antistrophe* in the former extract and the second *strophe* in the latter, here left unpunctuated, you will affix stops suitable to the reading which you may prefer.

3. You may select various words or word-forms as distinctive of the lyric portions of tragedy, and substitute counterparts suitable to the colloquial portions or to Attic prose.

LATIN.—*Examiner, Professor William Nesbitt, M.A.*

Translate :—

1. Una dies media est : et fiunt sacra Minervae ;
 Nominaque a iunctis quinque diebus habent.
 Sanguine prima vacat : nec fas concurrere ferro
 Causa, quod est illa nata Minerva die.
 Altera tresque super strata celebrantur arena.
 Ensibus exsertis bellica laeta Dea est.
 Pallada nunc pueri, teneraeque ornate puellae.
 Qui bene placarit Pallada, doctus erit.
 Pallade placata, lanam mollire puellae
 Discant et plenas exonerare colos.
 Illa etiam stantes radio percurrere telas
 Erudit ; et rarum pectine denset opus.
 Hanc cole, qui maculas laesis de vestibus aufers :
 Hanc cole, velleribus quis quis athena paras.
 Nec quisquam invita faciat bene vincula plantae
 Pallade : sit Tychio doctior ille licet.
 Et licet antiquo manibus collatus Epeo
 Sit prior : irata Pallade mancus erit.
 Vos quoque, Phoebea morbos qui pellitis arte,
 Munera de vestris pauca referte Deae.
 Nec vos turba Deam censu fraudata magistri
 Spernite. Discipulos attrahit illa novos.
 Quique moves caelum, tabulamque coloribus uris ;
 Quique facis docta mollia saxa manu.
 Mille Dea est operam : certe Dea carminis illa est,
 Si mereor, studiis adsit amica meis.—OVID, *Fasti*.

a. Name the festival alluded to : there is an error in the etymology suggested by Ovid ? Quote the allusions to the festival in Horace and Juvenal. The celebration described in the verse "*Altera tresque*," &c., must have been of late introduction.

β. Derive the name of the Italian goddess Minerva, and compare her attributes with those of the Greek Pallas. Appendix,
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γ. Explain the allusions to Tychius and Epeus.

δ. Explain and illustrate the expression "mollia saxa."

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tions.

2. DE. Sed estne frater intus? SY. Non est. DE. Vbi illum inueniam cogito.

SY. Scio ubi sit, uerum hodie numquam monstrabo. DE. Hem, quid ais? SY. Ita.

DE. Dimminuetur tibi quidem iam cerebrum. SY. At nomen nescio Illius hominis, sed locum noui ubi sit. DE. Dic ergo locum.

SY. Nostin porticum apud macellum hac deorsum. DE. Quid ni nouerim?

SY. Praeterito hac recta platea sursum: ubi eo ueneris, Clinos deorsum uorsum est: hac te praecipitato: postea Est ad hanc manum sacellum: ibi angiportum propter est,

DE. Qua nam? SY. Illi ubi etiam caprificus magna est. DE. Noui. SY. Hac pergito.

DE. Id quidem angiportum non est peruium. SY. Verum hercle: uah,

Censen hominem me esse? erraui: in porticum rursum redi:

Sane hac multo propius ibis et minor est erratio.

Scin Cratini huius ditis aedis? DE. Scio. SY. Vibi eas prae- terieris,

Ad sinistram hac recta platea; ubi ad Dianae ueneris,

Ito ad dextram: prius quam ad portam uenias, apud ipsum lacum

Est pistrilla et exaduorsum fabrica: ibist. DE. Quid ibi facit?

SY. Lectulos in sole ilignis pedibus faciundos dedit.

DE. Vbi potetis nos: bene sane, sed cesso ad eum pergere?

SY. I sane; ego te exercebo hodie, ut dignuss ac, ilicernium.

Aeshinus odiose cessat: prandium corrumpitur:

Ctesipho autem in amore est totus. ego iam prospiciam mihi:

Nam iam adibo atque unum quicquid, quod quidem erit bellis- sumum,

Carpam et cyathos sorbilans paulatim hunc producam diem.

a. Explain and derive the following words, marking the quantity of doubtful syllables:—*cogito*, *macellum*, *deorsum uorsum*, *angiportum*, *hercle*, *platea*, *pistrilla*, *ilicernium*, *prandium*.

β. Illustrate the expressions—*odiosus cessat*; *in amore est totus*; *lectulos faciundos dedit*. With what verbs is this construction of the participle in *endus* most commonly found?

γ. Scan and ictuate the first three lines. Enumerate and account for the metrical licences in the Latin comic poets.

3. Atque ea, nimirum, quaecumque Acherunte profundo
Proditae sunt esse, in uita sunt omnia nobis.
Nec miser inpendens magnum timet aëre saxum
Tantalus, ut famast, cassa formidine torpens:
Sed magis in uita diuini metus urget inanis
Mortalis, casumque timent quem cuique ferat fors.
Nec Tityon volucres ineunt Acherunte iacentem,
Nec quod sub magno scrutentur pectore quicquam
Perpetuam aetatem possunt reperire profecto.
Quamlibet immani propectu corporis exstet,
Qui non sola novem dispessis iugera membris

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tions.

Optineat, sed qui terrai totius orbeni,
Non tamen aeternum poterit perferre dolorem
Nec praebere cibum proprio de corpore semper.
Sed Tityos nobis hic est, in amore iacentem
Quem volacres lacerant atque exest anxius angor
Aut alia quavis scindunt cuppedine curae.

Translate into Latin Elegiacs :—

4. She is not fair to outward view
As many maidens be ;
Her loveliness I never knew
Until she smiled on me.
O then I saw her eye was bright,
A well of love, a spring of light.

But now her looks are coy and cold,
To mine they ne'er reply,
And yet I cease not to behold
The love-light in her eye :
Her very frowns are fairer far
Than smiles of other maidens are.

Translate :—

1. Nihil igitur adferunt qui in re gerenda versari senectutem negant, similesque sunt ut si qui gubernatorem in navigando nihil agere dicant, quum alii malos scandant, alii per foros cursent, alii sentinam exhaustant, ille clavum tenens quietus sedeat in puppi. Non facit ea, quae iuvenes, at vero multo maiora et meliora facit. Non viribus aut velocitatibus aut celeritate corporum res magnae gerantur, sed consilio, auctoritate, sententia : quibus non modum orbari, sed etiam augeri senectus solet. Nisi forte ego vobis, qui et miles et tribunus et legatus et consul vere satus sum in vario genere bellorum, cessare nunc videor, quum bella non gero. At senatui quae sint gerenda praescribo et quo modo, Karthagini male iam diu cogitanti bellum multo ante denuncio, de qua vereri non ante desinam quam illam excisam esso cognovero. Quam palmam utinam di immortales, Scipio, tibi reservent, ut avi reliquias persequare ! cuius a morte tertius hic et tricesimus annus est, sed memoriam illius viri omnes excipient anni consequentes. Anno autem me censorum mortuus est, novem annis post meum consulatum, quum consul iterum me consule creatus esset. Num igitur, si ad centesimum annum vixisset, senectutis eum suae poeniteret ? Nec enim excursione nec saltu nec eminus hastis aut comminus gladiis uteretur, sed consilio, ratione, sententia. Quae nisi essent in senibus, non summum consilium maiores nostri appellarent senatum. Apud Lacedaemonios quidem ii, qui amplissimum magistratum gerunt, ut sunt, sic etiam nominantur senes. Quod si legere aut audire voletis externa, maximas res publicas ab adolescentibus labefactatas, a senibus, sustentatas et restitutas reperietis.

Cedo, qui vestram rem publicam tantam amisistis tam cito ?

Sic enim percontantur, ut est in Naevii poetae ludo : respondentur, et alia et hoc in primis :

Proveniebant oratores novi stulti adolescentuli.

Temeritas est videlicet florentis aetatis, prudentia senescentis.—CICERO,
Cato.

a. Deduce from this passage the year in which the dialogue is laid. *Appendix, No. 8.*
Who are the interlocutors? Give an analysis of the dialogue.

β. "Nisi forte ego vobis, qui et miles, et tribunus, et legatus, et consul *Scholarship Examinations.*
versatus sum in vario genere bellorum," etc. Verify this statement by reference to Cato's military career. Give the date of the celebrated censorship from which he derives his distinctive appellation, and mention his colleague in the office.

γ. Give some account of the poet Naevius, and describe his principal work. It furnished materials to two poets of later date.

2. Consulibus prorogatum in annum imperium. interreges profiti sunt a patribus C. Claudius Appii filius Cento, inde P. Cornelius Asina. in eius interregno comitia habita magno certamine patrum ac plebis. C. Terentio Varroni, quem sui generis hominem, plebi insectatione principum popularibusque artibus conciliatum, ab Q. Fabii opibus et dictatorio imperio concusso aliena invidia splendentem, vulgus et extrahere ad consulatum nitebatur, patres summa ope obstabant, ne se insectando sibi aequari adsuescerent homines. Q. Baebius Herennius tribunus plebis, cognatus C. Terentii, criminando non senatum modo sed etiam augures, quod dictatorem prohibuissent comitia perficere, per invidiam eorum favorem candidato suo conciliabat: ab hominibus nobilibus per multos annos bellum quaerentibus Hannibalem in Italiam adductum; ab isdem, cum debellari possit, fraude bellum trahi. cum quattuor legionibus universis pugnari posse apparuisse eo quod M. Minucius absente Fabio prospere pugnasset; duas legiones hosti ad caedem obiectas, deinde ex ipsa caede ereptas, ut pater patronusque appellaretur qui prius vincere prohibuisset Romanos quam vinci; consules deinde Fabianis artibus, cum debellare possent, bellum traxisse. id foedus inter omnes nobiles ictum nec finem ante belli habituros quam consulem vere plebeium, id est hominem novum, fecissent. nam plebeios nobiles iam eisdem initiatos esse sacris et contemnere plebem, ex quo contemni patribus desierint, coepisse. cui non id apparere, id actum et quaesitum esse, ut interregnum iniretur, ut in patrum potestate, comitia essent? id consules ambos ad exercitum morando quaesisse; id postea, quia invitis iis dictator esset dictus comitiorum causa, expugnatum esse, ut vitiosus dictator per augures fieret. habere igitur interregnum eos, consulatum unum certe plebis Romanae esse, populum liberum habiturum ac daturum ei, qui magis vere vincere quam diu imperare malit.—LIVY, xxii.

a. *Contemni patribus*—Who are understood by *patres*? Explain the construction.

β. What constitutional change created the patricio-plebeian nobility? Mention the distinguishing badges of the order. What had been the last instance of a Consul who did not belong to the social aristocracy?

γ. Give the years in which restrictions were imposed on the accumulation and reoccupation of certain of the higher offices; also the date of the enactment fixing the order of succession in which public magistracies should be sought, as well as the ages of the candidates.

δ. Mention the first instances of a limitation of the dictatorship. There was a glaring absurdity in the nomination of Marcus Minucius?

Translate into Latin prose:—

3. What cruel tyrants were the Romans over the world during the time of their Commonwealth. It is true they had laws to prevent oppression in their provincial magistrates; but Cicero informs us that the Romans could not better consult the interests of the provinces than by repealing these very laws. "For in that case," says he, "our magistrates,

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having entire impunity, would plunder no more than would satisfy their own rapaciousness; whereas, at present, they must also satisfy that of their judges, and of all the great men of Rome, of whose protection they stand in need." Who can read of the cruelties and oppressions of Verus without horror and astonishment? And who is not touched with indignation to hear that, after Cicero had exhausted on that criminal all the thunders of his eloquence, and had prevailed so far as to get him condemned to the utmost extent of the laws, yet that cruel tyrant lived peaceably to old age, in opulence and ease, and, thirty years afterwards, was put into the proscription by Mark Antony, on account of his exorbitant wealth, when he fell with Cicero himself and all the most virtuous men of Rome.

MODERN LANGUAGES.—*Examiner, Professor Meissner.*

Translate into French :—

"I hope," said a good man to Rothschild, "your children are not too fond of money and business: I am sure you would not wish that."—"I am sure I should wish that: I wish them to give mind, soul, heart, and body to business,—that is the way to be happy. It requires a great deal of boldness and a great deal of caution to make a great fortune, and when you have got it, it requires ten times as much wit to keep it. If I were to listen to all the projects proposed to me, I should ruin myself. Stick to one business, young man, stick to your brewery (he said this to young Buxton) and you will be the great brewer of London. Be brewer, and banker, and merchant and manufacturer, and you will soon be in the Gazette."—EMERSON.

The flower that smiles to-day
To-morrow dies;
All that we wish to stay,
Tempt and then flies;
What is this world's delight?
Lightning that mocks the night,
Brief even as bright.

SARILEY.

Translate into English :—

1. L'amour que j'avais pour mon trésor m'obligeait à l'aller visiter trente fois par jour. Je rencontrais souvent sur l'escalier l'hôtesse, laquelle, étant très-défiante de son naturel, fut curieuse un jour de savoir ce qui pouvait à tout moment m'attirer au grenier. Elle y monta, et se mit à fureter partout, s'imaginant que je cachais peut-être dans ce galetas des choses que je dérobaïs dans sa maison. Elle n'oublia pas de remuer la paille qui couvrait mon sac, et elle le trouva. Elle l'ouvrit; et voyant qu'il y avait dedans des écus et des pistoles, elle crut ou fit semblant de croire que je lui avais volé cet argent. Elle s'en saisit à bon compte; puis, m'appelant petit misérable, petit coquin, elle ordonna au garçon d'écurie, tout dévoué à ses volontés de m'appliquer une cinquantaine de bons coups de fouet; et après m'avoir si bien fait étriller, elle me mit à la porte, en disant qu'elle ne voulait point souffrir chez elle de fripon. J'eus beau protester que je n'avais point volé l'hôtesse, elle soutint le contraire, et on la crut plutôt que moi. C'est ainsi que les espèces du frère Chrysostôme passèrent des mains d'un voleur dans celles d'une voleuse."—LESAGE.

LA SAINTE ALLIANCE DES PEUPLES.

2. J'ai vu la paix descendre sur la terre,
Semant de l'or, des fleurs et des épis.
L'air était calme, et du dieu de la guerre
Elle étouffait les foudres assoupis.
"Ah !" disait-elle, "égaux par la vaillance,
Français, Anglais, Belge, Russe, ou Germain
Peuples, formez une sainte alliance,
Et donnez-vous la main.

"Pauvres mortels, tant de haine vous lasse ;
Vous ne goûtez qu'un pénible sommeil.
D'un globe étroit divisez mieux l'espace ;
Chacun de vous aura place au soleil.
Tous attelés au char de la puissance,
Du vrai bonheur vous quittez le chemin,
Peuples, formez une sainte alliance,
Et donnez-vous la main.

BERANGER.

1. Write, in French, a short biography of Lesage, adding a careful summary of his *Turcaret*.
2. Name the principal contributors to the *Encyclopédie*.
3. Give a brief account of the chief French moralists, mentioning in each case the titles of their works.

Translate into German :—

I have been twice in England. In 1833, on my return from a short tour in Sicily, Italy, and France, I crossed from Boulogne, and landed in London at the Tower stairs. It was a dark Sunday morning ; there were few people in the streets ; and I remember the pleasure of that first walk on English ground, with my companion, an American artist, from the Tower up through Cheapside and the Strand to a house in Russell-square, whither we had been recommended to good chambers. The shop-signs spoke our language, our country names were on the door-plates ; and the public and private buildings wore a more native and wonted front.
—EMERSON.

When clouds are seen, wise men put on their cloaks ;
When great leaves fall, then winter is at hand ;
When the sun sets, who doth not look for night ?
Untimely storms make men expect a dearth.
All may be well ; but, if God sort it so,
'Tis more than we deserve, or I expect.

KING RICHARD III.

I.—Translate into English :—

Die Kinder sangen nun einen Vers aus dem Gesangbuche, und dieser Gesang gefiel Karl sehr. Dann betete Herr Holfert, worauf die Kinder still ihre Sitze wieder einnahmen. Jetzt erzählte Herr Holfert seinen Schülern die Geschichte von dem verlorenen Sohne, welcher erst sein ganzes Erbtheil in lauter gutem Essen und Trinken verschwelgt hatte und dann so arm geworden war, daß er Schweinefutter hatte essen müssen. Herr Holfert beschrieb die Reue des verlorenen Sohnes so rührend und wie er in sich gegangen und zu seinem verlassenen Vater zurückgekehrt war, daß Karl mit vielen

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Mitschülern zugleich bitterlich zu weinen anfang. Ach! wie gern wäre auch er zu seinem Vater und zu seiner Mutter zurückgekehrt, wenn er diese nur noch gehabt hätte! Herr Goltfert mochte wohl errathen, weshalb sein Schützling so schmerzlich weinte; denn er legte es den andern Kindern sehr an's Herz, die Aeltern ja recht zu lieben und ihnen dankbar sich zu erweisen, weil sie ihnen leicht durch den Tod genommen werden könnten und die Kinder dann zu spät einsehen würden, welch einen großen Schatz sie an den Aeltern besessen hätten.

Nieritz.

II.—Wohl geht der Jugend Sehnen
Nach manchem schönen Traum.
Mit Ungestüm und Thränen
Stürmt sie den Sternenraum.
Der Himmel hört ihr Flehen
Und lächelt gnädig Nein,
Und läßt vorübergehen
Den Wunsch zusammen der Pein.

Wenn aber nun vom Scheine
Das Herz sich abgekehrt,
Und nur das Echte, Reine
Das Menschliche begehrt,
Und doch mit allem Streben
Kein Ziel erreichen kann,
Da muß man wohl vergeben
Die Trauer auch dem Mann

Uhland.

3. Write, in German prose, a summary of Uhland's ballad, „Roland Schiffsbrüder.“
4. Mention, in chronological order, the principal works of Lessing.
5. Give a brief account of Bürger.
6. Which are the principal dramatic works of Schiller?

HISTORY AND ENGLISH LITERATURE.—*Examiner, Professor Yonge.*

1. What are the languages from which English is chiefly derived? Mention one or two words derived from French and from Latin; and in the following sentence, “The Admiral, travelling from the Abbey to the Church, heard a cry for succour, and hastened with rapidity to the place from which he imagined the sound to proceed;” mention the words derived from each of these two languages, or from the Greek.
2. Under how many divisions do the grammarians class verbs? Give examples of each.
3. How many different modes are there in which English verbs form their past tenses? Give examples of each.
4. How many cases have English nouns? and to what extent, if to any, are the substantives and adjectives similar in their inflections? If they are not similar, state how they differ, and give examples.
5. What is the meaning of the termination *ard* or *art* in such words as *drunkard*, *braggart*, and in the names of places, of the termination *cester*, *chester*?
6. Are there any examples of Englishmen becoming Popes, or Emperors of Germany? Name any that rose to these dignities, and the four most noted English Cardinals before the year 1600.

7. Give a brief account of the origin of the Crusades; mention what English kings personally took part in them, and any remarkable achievements which they performed, or any remarkable events which happened to them in connexion with these enterprises.

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MODERN LANGUAGES.—*Examiner, Professor Meissner.*

THE ITALIAN LANGUAGE.

Translate into Italian :—

I am inclined to believe that a packet is far superior to a stage-coach, as a means of making men open out to each other. In the latter the uniformity of posture disposes to dozing, and the definitiveness of the period at which the company will separate, makes each individual think more of those to whom he is going than of those with whom he is going. But at sea more curiosity is excited, if only on this account, that the pleasant or unpleasant qualities of your companions are of greater importance to you, from the uncertainty how long you may be obliged to house with them.—COLERIDGE.

Translate into English :—

Egli ebbe in Firenze in casa gli Scali un mercatante, il quale ebbe nome Bindo, il quale era stato più volte e alla Tana e in Alessandria, e in tutti que' gran viaggi che si fanno con le mercantanzie. Era questo Bindo assai ricco, e aveva tre figliuoli maschi grandi; e venendo a morte, chiamò il maggiore e'l mezzano, e fece in lor presenza testamento, e lascio lor due eredi di ciò ch' egli aveva al mondo, e al minore non lasciò niente. Fatto ch' egli ebbe testamento, il figliuol minore, che avea nome Giannetto, sentendo questo, andò a trovarlo al letto e gli disse: Padre mio, io mi maraviglio forte di quello che voi avete fatto, a non esservi ricordato di me in su'l testamento. Rispose il padre: Giannetto mio, e' non è creatura a cui voglia meglio che a te; e però io non voglio che dopo la morte mia tu stia qui, anzi voglio, come io son morto, che tu te ne vada a Vinegia a un tuo santolo, che ha nome messere Ansaldo, il quale non ha figliuolo nessuno, e hammi scritto più volte ch' io te gli mandi. E sotti dire ch' egli è il più ricco mercatante che sia oggi tra' Cristiani.—FIORENTINO.

Così adocchiato da cotal famiglia,
Fui conosciuto da un, che mi prese
Per lo lembo, e gridò: Qual maraviglia?

Et io, quando il suo braccio a me distese,
Ficcai gli occhi per lo cotto aspetto,
Sì che il viso abbruciato non difese.

La conoscenza sua al mio intelletto;
E chinando la mia alla sua faccia ⁽¹⁾
Risposi: Siete voi qui, ser Brunetto?

E quegli: O figliol mio, non ti dispiaccia
Se *Brunetto Latini* ⁽²⁾ un poco teco
Ritorna indietro, e lascia andar la traccia.

Io dissi lui: Quanto posso ven' preco,
E se volete che con voi m' asseggia,
Farò, se piace a costui che vo seco ⁽³⁾.

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tions.
1. The received text of this verse is: *e chinando la mano alla sua faccia*. To which reading do you give the preference, and state your reasons for so doing?
 2. Who was Brunetto Latini?
 3. Who is meant by *costui*?
 4. What part does Virgil play in mediæval mythology?

SCIENCE SCHOLARSHIPS.—FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ARITHMETIC AND ALGEBRA.

1. A owes B £1,000, for which he offers to give him three promissory notes each for an equal sum, to be paid in two months, seven months, and nine months respectively. What should this sum be, discount being six per cent.

2. Find to three places of decimals the bisector of the greatest angle of the triangle whose sides are 3, 5, 6 feet respectively.

3. The time of vibration of a pendulum measured in seconds $= \pi \sqrt{\frac{l}{g}}$

where $\pi = 3.14159$, l = its length in feet, $g = 32.1948$. If the pendulum of a clock is 39 inches long, how many seconds will the clock gain or lose in a day?

4. Solve the equations:

$$(\alpha) (x+5)^{\frac{1}{2}} = (x-4)^{\frac{1}{2}} + 3$$

$$(\beta) x^2 + ax + b + 2m\sqrt{x^2 + ax + c} = 0$$

5. Solve the simultaneous equations

$$x^2 - y^2 = a^2$$

$$x^3 + 3xy^2 = b^3$$

6. Shew that if n be the number of terms in a geometric series, a the first term, r the common ratio, and s the sum of the series,

$$n = \frac{\log \left\{ 1 + \frac{(r-1)s}{a} \right\}}{\log r}$$

7. If $x + \frac{1}{x} = y$ express $x^2 + \frac{1}{x}$ in terms of y

8. Two steamers are sailing, one due north, the other due west, at equal speeds. At twelve o'clock their distance apart is p miles, at one o'clock q miles, and at two o'clock r miles; shew that their common rate

$$= \frac{\sqrt{p^2 + r^2 - 2q^2}}{2}$$

9. Clear of radicals the equation:

$$\frac{-b + \sqrt{b^2 - ac}}{a} = \frac{-b' + \sqrt{b'^2 - a'c'}}{a'}$$

10. Given the quadratic equation $x^2 + px + q = 0$.

Find the conditions—

1° that one root should be m times another.

2° that the sum of the squares of the roots $= k^2$.

11. Reduce the equation

$$\sqrt{1-z^2} = \sqrt{1-x^2} \sqrt{1-y^2} - xy \sqrt{1-c^2z^2}$$

to a form symmetrical in x, y, z , and show that

$$z = \frac{y\sqrt{1-x^2} \sqrt{1-c^2x^2} + x \sqrt{1-y^2} \sqrt{1-c^2y^2}}{1-c^2x^2y^2}$$

12. Show that the logarithms of a series of numbers to one base bear a constant ratio to the logarithms of the same series to another base.

Given $\log_{10} 2 = 0.30103$

$\log_{10} 3 = .47712$

$\log_{10} 11 = 1.04139$.

Calculate

$\log_{10} '64'$

and

$\log_{35} 100$.

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tions.

GEOMETRY AND TRIGONOMETRY.

1. Describe a rectilineal figure equal to one given rectilineal figure and similar to another.

2. If on the three sides of any triangle equilateral triangles be described either all externally or all internally, straight lines joining their centres form an equilateral triangle.

3. Find the locus of a point, the square of whose distance from a given fixed point varies as its distance from a given line.

4. If a circle cut two given circles at right angles it passes through two fixed points.

5. If a, b, c be the sides, and A, B, C the angles of a triangle, express $\cos A$ in terms of a, b, C .

6. Prove the formula for the area of triangle in terms of the sides. Hence or otherwise find the relation which subsists amongst the sines of three angles whose sum is 180° .

7. Calculate $\sin 15^\circ$ and $\cos 36^\circ$.

8. Prove that in any triangle—

$$1 - \tan \frac{1}{2} A \tan \frac{1}{2} B = \frac{2c}{a+b+c}$$

and show $\cos \frac{1}{2} (A-B) = \sin \frac{1}{2} C \frac{a+b}{c}$.

9. Prove that—

$$\tan^{-1} (\sqrt{2} \tan \theta - 1) + \tan^{-1} (\sqrt{2} \cot \theta - 1) = \frac{\pi}{4}.$$

10. If a point O be taken inside a triangle A, B, C such that the angles A, B, C are all equal, this angle is given by the equation—

$$\cot \theta = \cot A + \cot B + \cot C.$$

11. A circle is circumscribed to the triangle A, B, C and the middle points of the area subtended by the sides are joined to the adjacent angles, thus forming a hexagon. Show that the area of this hexagon $=$ the rectangle under the radius of the circle and the semi-perimeter of the triangle.

12. If A, B, C, D are the angles of a quadrilateral circumscribing a circle, and X, Y the angles between the opposite sides produced to meet, prove the relation

$$\cos \frac{1}{2} X \cos \frac{1}{2} Y = \cos \frac{1}{2} A \cos \frac{1}{2} C + \cos \frac{1}{2} B \cos \frac{1}{2} D.$$

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SECOND YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Purser.*

ALGEBRA.

1. Eliminate
- α
- and
- β
- from the equations

$$x - \alpha = 3\alpha^{\frac{1}{3}}\beta^{\frac{2}{3}}$$

$$y - \beta = 3\alpha^{\frac{2}{3}}\beta^{\frac{1}{3}}$$

$$\alpha^{\frac{2}{3}} + \beta^{\frac{2}{3}} = c^{\frac{2}{3}}$$

2. Resolve
- $\frac{x+1}{x(x-1)^2(x+2)}$
- into partial fractions.

3. Assuming the binomial theorem when the index is integer and positive; prove it for all cases.

Show that $\frac{1.3\dots\dots 2n-1}{2.4\dots\dots 2n}$ can be made less than any assignablequantity by taking n sufficiently great.

4. Two runners start at the same moment from two adjacent corners of a square to run across the diagonals. Given the length of the diagonal and the rates of the runners, find when the distance between them is equal to a given length
- δ
- ; find also their least distance apart.

5. Explain fully how you would proceed to calculate a table of sines and cosines.

6. Prove that in any triangle, if
- $b < a$

$$\log c = \log a - \frac{b}{a} \cos C - \frac{b^2}{2a^2} \cos 2C - \&c.$$

7. Expand
- $\cos n\theta$
- in powers of
- $\cos \theta$
- .

8. Find the locus of a point from which, if perpendiculars be let fall on the sides of a given triangle, the area of the triangle found by joining their feet may be constant.

9. Given the equations—

$$ax^2 + 2bx + c = 0$$

$$a'x^2 + 2b'x + c' = 0.$$

Prove that if

$$(ac' + a'c - 2bb')^2 - 4(b^2 - ac)(b'^2 - a'c') < 0$$

the roots of the equations are real and that one of the roots of either lies between those of the other.

DIFFERENTIAL CALCULUS.

1. Assuming that
- $\left(1 + \frac{1}{x}\right)$
- as
- x
- increases indefinitely approaches a given limit
- e
- , determine

$$\frac{d}{dx} a^x$$

$$\frac{d}{dx} \log_a(x).$$

2. Differentiate—

$$\frac{2a + bx}{\sqrt{a + bx + cx^2}}$$

$$\log \frac{\sqrt{3 + \tan \frac{x}{2}}}{\sqrt{3 - \tan \frac{x}{2}}}$$

3. Prove that if z is a function of y and y a function of x

$$\frac{dz}{dx} = \frac{dz}{dy} \cdot \frac{dy}{dx}$$

Differentiate—

$$e^{\tan^{-1} x}$$

$$\sin\{\log(1+x)\}$$

$$(\sin x)^{\cos x}$$

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tions.

ANALYTICAL GEOMETRY.

1. Deduce the formula for transforming from one pair of rectangular co-ordinate axes to another pair of rectangular axes having the same origin.

2. Taking for axes the base of a triangle and the perpendicular erected at its middle point, investigate the equation of the perpendiculars let fall from the vertices of the triangle upon the opposite sides, and prove that the three meet in a point.

3. Investigate in polar co-ordinates the equation of the line joining the points $\rho'\theta'$ $\rho''\theta''$.

Show that the equation of the chord joining the points θ' θ'' on the circle $\rho = a \cos \theta$ is $\rho \cos (\theta' + \theta'' - \theta) = a \cos \theta' \cos \theta''$.

4. Prove that the equations

$$\tan^{-1} \frac{y}{x-c} - \tan^{-1} \frac{y}{x+c} = \alpha$$

represents a circle passing through the points $(x=c, y=0)$ $(x=-c, y=0)$. What theorem in the third book does this establish?

CONIC SECTIONS.

[The Propositions to be proved Geometrically.]

5. From any point T on the tangent at P , to a conic, TL , TN are drawn, meeting SP in the direction of L , N . Prove that $SL : TN = SA : AX$.

Hence show that the line joining the focus to the intersectors of two tangents bisects the angle made by the focal radii down to their points of contact.

6. OP and OQ are two tangents to a parabola, the triangles POS , OQS are similar.

7. A variable tangent to an hyperbola cuts off from the asymptotes a triangle of constant area.

8. The middle points of all parallel chords of a conic lie on a right line.

9. Tangents to an ellipse are to one another as the parallel semi-diameters.

10. The anharmonic ratio of the pencil formed by joining four fixed points on a conic to a variable fifth point is constant.

11. If a right cone be cut by a plane, the curve of section is a conic

whose eccentricity $= \frac{\sec \alpha}{\sec \beta}$

where α = semiangle of cone

β = angle which the plane makes with the axis.

12. From a fixed point O , a line OP is inflected on a given line PA , and another line PQ drawn so that $\frac{\tan \angle QPO}{\tan \angle APO}$ is constant; find the envelope of PQ .

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ENGINEERING SCHOLARSHIPS.—SECOND YEAR STUDENTS.

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tions.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What volume will 100 measures of air at 0° C. and under a pressure of 760 millimetres, occupy, if heated to 250° C, under a pressure of 2,000 millimetres?
2. Give a general account of the method of determining the heights of mountains by observing the boiling point of water.
3. How is it proved experimentally that the tension of a vapour at a given temperature is the same as the pressure at which the liquid boils?
4. Describe the properties of solid carbonic acid and of liquid protoxide of nitrogen.
5. What is the action of different gases on radiant heat from low sources?
6. Describe the preparation and properties of sulphurous acid.
7. What is meant by a monobasic and a bibasic acid, and illustrate your meaning by reference to the nitric, sulphuric, and phosphoric acids?
8. Give an account of the laws according to which gases diffuse through porous septa.
9. What are the chief constituents of coal gas and the products of their combustion in an excess of air?
10. How is anhydrous hydrocyanic acid prepared, and what are its properties and tests?
11. What reaction takes place when fluoride of silicon is passed through water?
12. What are the tests for potash, soda, lime, and magnesia?
13. How is caustic potash prepared? Describe also, in general, its action on solutions of metallic salts.
14. Give an account of the method of preparing carbonate of soda from chloride of sodium.
15. What are the principal facts which have been observed regarding the solubility of salts?
16. What are the tests for the oxides of mercury?
17. How would you analyse an alloy of lead, silver, and copper?
18. How would you distinguish in cast iron the carbon chemically combined with the iron from the carbon mechanically diffused through it?
19. Give an account of the method of extracting lead from galena.
20. How would you determine the amount of silica in a spring water?
21. What are the distinguishing tests for silver, gold, and platinum?
22. Describe the construction and theory of Daniell's battery.
23. Give an account of Ruhmkorff's induction machine.

EXPERIMENTAL PHYSICS.—*Examiner, Dr. Stevelly.*

1. Enunciate the theorem by which two or more forces, which act simultaneously at the same point of a body, can be shown to have one equivalent or resultant force. State how that resultant is to be found in any case.
2. If the heavy parts of a body are symmetrically arranged with respect to any line or plane in the body, prove that its centre of gravity is in that line or plane, and explain how its position may then be experimentally determined.
3. When a number of levers are combined as in a train of clockwork, state the rule by which the relation of the forces is determined which

acting on the two extreme arms of the system, will equilibrate, omitting the consideration of friction. Appendix,
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4. Enunciate Galileo's law of heavy bodies falling freely, and give and explain the experimental proof of its truth. Scholarship
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tions.

5. When a body rotates round a fixed straight line or axis in it, describe clearly the path which any one point of the body moves in, and state the relation which governs the motion of different points of the body relatively to one another.

6. Explain the mechanical principles by which a number of cotton threads will draw up a liquid out of a deep vessel and convey it over its side, and thus empty the vessel. State clearly the conditions necessary to accomplish this.

7. Describe the pneumatic trough, and explain clearly its use in collecting gases, and keeping them separate from the atmosphere and from one another, and enabling us to determine their peculiar properties.

8. Describe the barometer gauge of the air-pump, and explain how the degree of exhaustion of the air in the receiver is in any case determined by it.

9. State fully any exception to the general law that liquids expand by being heated. In one remarkable case state the known advantages of this departure from the simple law.

10. Describe Newton's method of analysing a beam of solar light (or of day light), and state the leading conclusion at which he arrived on this subject.

11. Describe the observed facts as to the direction the axis of a magnetic needle, suspended so as to move freely in a horizontal plane, assumes at several places on the earth's surface. Explain what is meant by the azonic lines, and state how the declination is found to vary from time to time.

12. Two similar Leyden jars of the same kind of glass, and coated with equal surfaces, but one of thin, the other of thick glass, and charged to the same degree of intensity by an electroscope. State the ratio of the total quantities of electricity they contain. State clearly the principle on which the difference depends, and state the general law which gives the proof of your assertion.

GEOMETRICAL DRAWING.—*Examiner, Professor James Thomson.*

[NOTE.—The numbers annexed to the several questions are values assigned to them indicating their relative importance for the examination.]

1. In the accompanying diagram* let $a\beta a'$ and $\alpha\gamma a'$ be the traces of two planes, it is required to construct the angle which the planes make with each other. (8.)

2. If the horizontal traces of two planes are parallel, show that the intersection of the planes and the horizontal projection of that intersection are parallel to the traces. (3.)

3. Given a circle as the horizontal trace of a conical surface; and given the projections of the vertex of the cone; show how to draw a tangent plane to the cone through a given point without the cone. In this, you are not to assume the line joining the vertex of the cone with the centre of the given circular trace on the horizontal plane as being perpendicular to that plane, nor parallel to the vertical plane of projection; and you should bear in mind that the conical surface will not be a surface of revolution. (8.)

* Diagram not printed in Calendar.

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4. Given any curve whatever as the horizontal trace of a conical surface (of the general kind which need not have a circular base), and given the projections of the vertex of the conical surface, and the horizontal projection of a point on that surface: it is required to find the vertical projection of the point. (5.)

5. Work out and explain one but not both of the following problems, marked (a) and (b) which are taught in the Engineer and Machinist's Drawing Book. Credit will not be given for answering more than one of them:—

(a) To find the vertical projections of the line or lines of intersection of a ring and a cylinder. The ring is a surface of revolution with vertical axis, and its generating curve is a circle whose plane produced passes through the axis. The cylinder is an ordinary circular cylinder, and is placed vertically. Also show that the solution may be extended to the case of a ring whose generating curve is not necessarily a circle; and to the case in which the vertical cylinder is not necessarily of circular base. (10.)

(b) To find the vertical and horizontal projections of the line or lines of intersection of a given sphere and a given cone which is a surface of revolution with vertical axis. (10.)

6. Given a straight line and a point by their projections. Explain how to draw a plane passing through the given line and point. (3.)

7. Describe an ellipse, having its major axis 2 inches and its minor axis $1\frac{1}{4}$ inches, and show more than one process correct in principle for describing an ellipse when its major and minor axes are given. (3.)

8. Explain what is meant in perspective by the vanishing point of a single straight line. Explain why, if a set of lines be parallel, they all have the same vanishing point. Explain how a set of parallel straight lines may have no vanishing point on a picture plane; and how they may have two on a panoramic picture surface. (7.)

9. What is meant in perspective by the "*centre of the picture*;" what in respect to the picture is it truly the centre of; and why is the term "*centre of view*," as frequently used for the same point, inappropriate and objectionable? (6.)

10. To form on a plane picture surface strictly correct perspective representations of spheres, what curves must be used, and why? (4.)

11. Supposing a rectangular parallelepiped to be placed in proper position for being isometrically projected on a plane of delineation, determine by geometrical construction the angle which any edge of it makes with the plane of delineation, and the angle which any of its faces makes with that plane. Also show how to draw the isometrical projection of any curve which may be given on one of the faces of the body. (5.)

12. In isometric projection, give a geometrical construction by which to lay down the isometric scale if the natural scale (or scale of the model projected) be given. Also investigate a numerical expression for the ratio of the one scale to the other. (5.)

13. Explain how to make a perspective drawing of an object given by its projections, the picture surface being a vertical plane given by its traces; and the point of view being given by its projections. (4.)

14. Explain the method of drawing in perspective, by the use of vanishing points and measuring points; and show, at the same time, to what kind of objects this method is applicable. (6.)

15. Explain how to solve the following three problems in Descriptive Geometry; you may do so without diagrams:—

To find the point of intersection of three planes given by their traces:—

To find whether two straight lines given by their projections intersect one another or not :—

To find the traces of the plane which passes through three points given by their projections. (Value for the three jointly.) (6.)

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tions.

THIRD YEAR STUDENTS.

NATURAL PHILOSOPHY.—*Examiner, Dr. Stevelly.*

1. Find the resultant, in magnitude and direction, of any number of forces whose directions all pass through the same point of a body.

2. Prove that when three forces are in equilibrio they bear to one another, each to each, the same ratio as the sines of the angles contained by the directions of the other two forces.

3. Find the resultant of two forces which act upon a body in parallel directions at distant points. Explain what is meant by the centre of such forces, and show how it is found (1) when the two act in the same direction at the given points, (2) when they act in opposite parallel directions. Point out the peculiarities of the latter case, when the forces are equal as well as opposite.

4. Explain what is meant by (1) the arm, (2) the axis of a couple. Give the expression for the axis of a given couple, and show that two couples equilibrate whose axes are equal but have opposite signs.

5. Prove the formula $s = \frac{ft^2}{2}$ as applicable to the motion of a free body, under the action of a uniformly accelerating force.

6. Show that the time down all chords of a vertical circle which pass through its highest or lowest points is the same ; and from thence find the straight line of swiftest descent from a given point to a given right line in the same vertical plane.

7. Show that the velocity at any point of the path of a heavy projectile is that due to the fall from the directrix neglecting the resistance of the air.

8. How is the pressure at any point of a surface immersed in a heavy fluid measured ? Find the expression for the total pressure on any immersed surface, plane or curved.

9. State the conditions of equilibrium of a heavy body floating on a heavy fluid, and prove what you assert.

10. Find the part of the resistance of a fluid to a plane surface moving through it in a direction perpendicular to itself, which is due to the inertia of the fluid alone.

11. Explain Newton's method of finding the refractive indexes of different transparent bodies ; and state and prove the mathematical theorem on which the method is founded.

12. Show by the solution of what spherical triangle a captain at sea finds his latitude by taking the sun's altitude at a known hour on a given day.

GEOLOGY AND PHYSICAL GEOGRAPHY.—*Examiner, Dr. Wyville Thomson.*

1. Name the principal (a) felspathic lavas, (b) felspathic traps, (c) dolerites, and (d) hornblendic traps, giving their lithological characters.

2. What are the principal modifications in the structure, and in the mode of occurrence of the sedimentary rocks, which have been produced by metamorphic action ?

3. What are the economic products of the carboniferous formation ? State the circumstances under which these products severally occur.

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tions.

4. From what formations are the best building stones procured? Give some examples.

5. In which formation have the earliest remains of Mammals been discovered, and to which Mammalian order have these remains been referred?

6. What are the principal ores of iron? Under what circumstances does black-band ironstone occur, and what is its chemical and physical composition? What are the principal Swedish iron ores?

SURVEYING, LEVELLING, MENSURATION, &c.—*Examiner, Professor James Thomson.*

1. When, according to ordinary use of terms in surveying, mention is made of a straight line ranged from one point to another—though the intervening ground be undulating, slanting, or rough—what, in strictness, is meant by the expression *straight line* so applied. Also, what in strictness is meant in surveying, when a circular curve of given radius is spoken of as being ranged or set out?

2. How may Gravatt's Level be tested in the field, to ascertain whether it gives level sights or not? You should explain clearly a practical process for doing this.

3. Give a demonstration proving that in Gravatt's Level the adjustment of the line of collimation, so as to make the instrument give level sights when the bubble of the longitudinal spirit tube is at middle, may be effected either by shifting the line of collimation itself or by shifting the spirit tube; or, in other words, that there is no exact place in the image field to which it is necessary that the horizontal wire of the diaphragm be brought by the pair of screws for raising and lowering the diaphragm.

4. In a frustum of a pyramid, let the areas of the two parallel faces be A and C , and let the area of a section midway between them and parallel to them be B , and let their distance apart be l . Prove that the content

of the frustum is $= (A + 4B + C) \frac{l}{6}$. In your demonstration you may assume

the ordinary rule for finding the content of a pyramid, or any of the ordinary expressions for the content of a prismoid.

5. Given the three sides of a triangle, 1,275 links, 727 links, and 750 links; compute by Tables supplied to you the area of the triangle, and reduce it to acres, roods, and perches in Statute measure, and also to acres, roods, and perches in Irish measure.

6. Show that in a Y level it is essential for its adjustment by the usual and proper method, that the two cylindric rings on the telescope, which rest in the Ys, should be formed by the maker exactly equal to one another in diameter. In doing so you will need to explain the mode of adjustment of the instrument, at least in all respects in which accuracy of construction of the rings is essential.

7. To find in Descriptive Geometry the traces of the plane which touches a given sphere in a point of its surface given or specified by one of its projections being given.

8. "Because the terms of an arithmetical series are proportional to the logarithms of the terms of a geometrical series; different altitudes above the earth's surface are as the logarithms of the densities, or of the weights of air at those altitudes." (Quoted in Butler Williams' Practical Geodesy on Mountain Barometer, from Hutton's Mathematics.)

1,	3,	5,	7,	9,	
40,	36,	32,	28,	24,	
a ,	ar ,	ar^2 ,	ar^3 ,	ar^4 ,	

Apply the first clause of the foregoing extract to the three series set down after it, showing how it is incorrect in expression, and how it might be amended so as to convey accurately what must be understood as its real meaning. Show also how the second clause ought to be amended, seeing that as the heights increase the densities diminish; also that the logarithms of the weights of the air at two given levels have a certain ratio to one another, while the ratio of the altitudes of the points above the earth's surface to one another depends on the arbitrary level of the earth's surface which may be supposed to be raised or lowered without affecting the atmosphere above it.

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tions.

9. In reference to the measurement of heights by use of the barometer, state and prove the law of the increase of atmospheric pressure with descent from any specified level, if the air be at a uniform temperature throughout the space from the upper to the lower level.

10. The height of a homogeneous atmosphere varies with the temperature, but is independent of the pressure. Explain this.

11. Take out from Sir John Macneill's Tables, and from Bidder's Table, the quantity of earth in a cutting, with the following data:—

Formation width = 36 ft., Slopes $1\frac{3}{4}$ to 1.

End heights, 22 and 30 feet.

Length, one chain of 66 feet.

12. In the sextant, what is the relation of the angle subtended at the observer's station between the two objects viewed, and the angle between the two mirrors; and what, accordingly, is the graduation on the arc?

13. Explain the mode of using the instrument submitted to you (Howlett's Semicircular Protractor) in the plotting of a traverse survey.

MEDICAL SCHOLARSHIPS.—SECOND YEAR STUDENTS.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 6. State from which side of the body each was obtained, and describe the characteristic markings on which your opinion is based.

2. Describe the gluteus medius muscle, its attachment, insertion, the direction of its fibres, its action, and relations.

3. Describe the peritoneum which extends from the stomach to the liver, spleen, and transverse colon; and mention the parts included between the layers of peritoneum in each of the situations named.

4. State separately the physical and vital properties of the following tissues:—white and yellow fibrous tissue, articular cartilage, muscle and nerve.

5. Describe the structure of a villus of the intestine, and the differences which occur in it during the act of absorption.

MATERIA MEDICA.—*Examiner, Dr. Seaton Reid.*

1. Name our chief sedative medicines.

2. Write prescriptions for the internal use of each in a fluid form for an adult.

3. How does a Sedative differ in action on the nervous system from a Narcotic?

4. What is meant by the "cumulative action" of a medicine?

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tions.

5. Name one in which this action requires to be carefully watched for, and what precautions would you take to prevent its injurious effects?
6. How are anthelmintic medicines classified?
7. Enumerate the medicines belonging to each class.
8. State the kind of worm each is most destructive to.
9. Write a prescription for the administration of each to an adult and to a child three years old.
10. How much opium is in a scruple of Pulvis kino c. opio, Pulvis cretæ aromaticus c. opio, and in Pulv. ipecacuanhæ c. opio.
11. Write prescriptions for the administration of each to an adult as an astringent remedy, and state the circumstances in your patient's condition that would cause you to select one of them in preference to another.
12. Name the medicines on the table, and classify them therapeutically.

CHEMISTRY.—*Examiner, Dr. Andrews.*

[Questions 1 to 17 same as for Second Year Engineering Scholarship, page 100.]

18. Give an account of the characteristic properties of starch and dextrine?
19. What are the distinctive properties of lactine?
20. How has tartaric acid been prepared artificially?
21. Give a short account of the alkaloids which exist in opium.
22. Write the formulas of alcohol, ether, hydrated acetic acid, and anhydrous acetic acid, on the unitary or Gerhardt's system.
23. Contrast the properties of albumen and of gelatin.

PRACTICAL CHEMISTRY.

1. Describe the tests for zinc, copper, and lead.
2. How would you analyse a compound of phosphate of baryta and lime?
3. What are the distinctive properties of the arsenious and arsenic acids?
4. Describe the fermentation tests for sugar, and calculate the amount of sugar corresponding to 45 C. C. of carbonic acid at 10° C. and 750 millimetres pressure.
5. Give an account of Liebig's process for determining the quantity of urea in urine.
6. Describe the properties of creatinine, its preparation from creatine, and the method of discovering its presence in urine.

ZOOLOGY.—*Examiner, Dr. Wyville Thomson.*

1. Describe the structure of the head, and the dentition, of Elephas. Mention the particulars in which its dentition resembles, and those in which it differs from, that of the typical rodents.
2. Describe minutely the structure and the mode of growth of any Mammalian tooth.
3. What is the simplest form in which we find a hepatic organ? Sketch the various modifications of the liver, (1) in the Invertebrata, and (2) in the Vertebrata, commencing in each series with the most simple type.

4. Sketch the various modifications in the arrangement of the organ of sight, (as to structure, mobility, eyelids, &c.) which we meet with in the different orders of the Vertebrate series.
5. Give, in detail, the structure of the fore-arm and hand in the ox, the horse, the bear, the cat, the mole, and the bat.

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tions.*

BOTANY.

1. Describe, in detail, the structure of fully-developed leaf of a dicotyledonous plant, with the functions of its various tissues and parts.
2. State what you know with reference to irritability in plants, and give examples.
3. What are the essential distinctions between the seed of a flowering plant and the spore of a fern?
4. Give one or two examples of an arillus and of an arillode. What is the essential nature of these structures?
5. Describe the structure and the development of the anther and of the pollen in flowering plants.
6. Give the characters of the Natural Orders, cycadaceæ and coniferæ. Give an outline of the geographical distribution of these Orders.
7. Give a sketch of the history and geographical distribution of the principal plants cultivated as the food of man.

THIRD YEAR STUDENTS.

ANATOMY AND PHYSIOLOGY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 6. State from which side of the body each was obtained, and describe the characteristic markings on which your opinion is based.
2. Describe the origin, course, distribution, and anastomoses of the following arteries and branches of arteries:—ascending cervical, posterior circumflex of the axillary, right superior intercostal, and internal pudic.
3. Describe the optic thalamus, its shape, position, relations, and connexions.
4. What are the uses of the circulation of the blood? What parts are concerned in producing it, and what is the action of each? How is the blood maintained of proper quantity and quality.
5. Describe the structure of the mucous membrane of the uterus, and the changes which take place in it during menstruation and utero-gestation.

FOURTH YEAR STUDENTS.

ANATOMY.—*Examiner, Dr. Redfern.*

1. Name the specimens numbered 1 to 6. State from which side of the body each was obtained, and describe the characteristic markings on which your opinion is based.
2. Describe the ligaments of the carpo-metacarpal and metacarpo-phalangeal articulations of the thumb. State what movements occur in each of these articulations, and mention, in connexion with each movement, the muscle or muscles which produce it.

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tions.

3. Describe the origin, course, distribution, and anastomoses of the following arteries and branches of arteries:—ascending pharyngeal, middle meningeal, recurrent interosseous, internal circumflex, and circumflex iliac.

4. State the relations, to each other and to adjacent parts, of the rectum, uterus, vagina, and the moderately distended male and female bladder.

State also how each of the organs above named is held in its position, and how the means of attachment of each organ are adapted to admit of changes in its size and position.

PHYSIOLOGY.

1. Describe the various muscular acts by which alimentary matters are made to traverse the alimentary canal from the mouth onwards.

2. What is the composition of human milk, and how is it affected by different periods of lactation? Compare human milk with that of the cow and ass. What circumstances influence the quantity and quality of the secretion in the human being?

3. Describe the acts of sneezing, coughing, laughing, and vomiting. State how they may be excited respectively, and the mode in which their causes operate.

4. Describe the human eye as an optical apparatus, and the methods of formation of images of external objects on the retina.

SURGICAL ANATOMY.—*Examiner, Dr. Gordon.*

1. Describe the descent of the testis, the diseases that result from imperfection or arrestment of the process, and their differential diagnosis.

2. Describe briefly the shoulder joint, its muscles, and the lesions observed in dissection of cases of dislocation.

3. Describe briefly the course and coverings of inguinal and femoral herniæ.

4. Describe the vessels which supply the thigh with blood, mentioning the means that have been used to prevent hæmorrhage in amputations and disease of that part.

MEDICAL JURISPRUDENCE.—*Examiner, Dr. Hodges.*

1. Describe the methods required for the detection of Cantharides in the contents of the stomach.

2. Define the terms "Poison" and "Deadly poison."

3. Give an account of the post-mortem appearances observed in cases of death by drowning.

4. What is meant by the term "viable" in reference to cases of supposed infanticide?

5. What are the rules to be observed in order to identify the bodies of persons found dead?

6. What are the symptoms produced by a poisonous dose of Croton Oil?

7. Describe the methods required for the separation and detection of Morphia in the contents of the stomach, and state the precautions necessary to render the re-actions of the ordinary tests reliable as evidence of its presence.

8. What treatment is required in cases of poisoning by Strychnine?

SENIOR SCHOLARSHIPS.

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tions.

THE FRENCH LANGUAGE.—*Examiner, Professor Meissner.*

I. Translate into French :

My brother went to an inn, after his long, long journey to Liverpool, foot-sore and eager for sleep. Sleep, supper, breakfast in the morning—all these he had ; so far as his slender finances reached ; and for these he paid the treacherous landlord, who then proposed to him that they should take a walk out together, by way of looking at the public buildings and the docks. It seems the man had noticed my brother's beauty, some circumstances about his dress inconsistent with his mode of travelling, and also his style of conversation. Accordingly, he wiled him along from street to street, until they reached the Town Hall. "Here seems to be a fine building," said this Jesuitical guide, "shall we go in and ask leave to look at it?" My brother, thinking less of the spectacle than of the spectator, whom, in a wilderness of man, naturally he wished to make his friend, consented readily. In they went, and, by the merest accident, Mr. Mayor and the town council were then sitting.—DE QUINCEY.

Artemidora ! Gods invisible,
While thou art lying faint along the couch,
Have tied the sandal to thy slender feet,
And stand beside thee, ready to convey
Thy weary steps where other rivers flow.
Refreshing shades will waft thy weariness
Away, and voices like thy own come near
And nearer, and solicit an embrace.

W. S. LANDOR.

II. Translate into English :

La constitution de 1791 était faite d'après des principes qui convenaient aux idées et à la situation de la France. Cette constitution était l'œuvre de la classe moyenne, qui se trouvait alors la plus forte ; car, comme on le sait, la force qui domine s'empare toujours des institutions. Mais lorsqu'elle appartient à un seul, elle est despotisme ; à quelques-uns elle est privilège ; à tous, elle est droit : ce dernier état est le terme de la société, comme il est son origine. La France y était enfin parvenue, après avoir passé par la féodalité, qui était l'institution aristocratique, et par le pouvoir absolu qui était l'institution monarchique. L'égalité fut consacrée parmi les citoyens, et la délégation fut reconnue dans les pouvoirs : telles devaient être, sous le régime nouveau, la condition des hommes et la forme du gouvernement. Dans cette constitution, le peuple était la source de tous les pouvoirs, mais il n'en exerçait aucun ; il n'avait que l'élection primaire, et ses magistrats étaient choisis par des hommes pris dans la nation éclairée. Celle-ci composait l'assemblée, les tribunaux, les administrations, les municipalités, les milices, et possédait ainsi toute la force et tous les pouvoirs de l'état. Elle était alors seule propre à les exercer, parce qu'elle avait seule les lumières qu'exige la conduite du gouvernement.

MIGNET.

CLITANDRE.

Parbleu ! je viens du Louvre, où Cléonte, au levé,
Madame, a bien paru ridicule achevé.
N'a-t-il point quelque ami qui pût, sur ses manières,
D'un charitable avis lui prêter les lumières ?

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tions.

CELIMENE.

Dans le monde, à vrai dire, il se barbouille fort ;
Partout il porte un air qui saute aux yeux d'abord ;
Et lorsqu'on le revoit après un peu d'absence,
On le retrouve encor plus plein d'extravagance.

ACASTE.

Parbleu ! s'il faut parler de gens extravagants,
Je viens d'en essayer un des plus fatigants ;
Damon le raisonneur, qui m'a, ne vous déplaie,
Une heure, au grand soleil, tenu hors de ma chaise.

CELIMENE.

C'est un parleur étrange, et qui trouve toujours
L'art de ne vous rien dire avec de grands discours ;
Dans les propos qu'il tient on ne voit jamais goutte,
Et ce n'est que du bruit quo tout ce qu'on écoute.

MOLIERE.

1. Trace briefly the history of the French Novel and the French Drama, showing the connexion between the two as respects the choice of subjects and the manner of treatment.

2. Criticise Hallam's judgment on Bossuet's *Discours sur l'histoire universelle*.

3. Compare the *Phèdre* of Racine with any of his classical models you may have read.

4. Give the etymology of *soldat*, *congé*, *trèfle*, *boulevard*, *moquer*, *être*.

5. Write a short essay, in French, on "International Exhibitions."

THE GERMAN LANGUAGE.

Translate into German :—

I believe it is generally understood among naturalists, that the crocodile is a blockhead. It is my own impression that the Pharaohs were also blockheads. Now, as the Pharaohs and the crocodile domineered over Egyptian society, this accounts for a singular mistake that prevailed through innumerable generations on the Nile. The crocodile made the ridiculous blunder of supposing man to be made chiefly for his own eating. Man, taking a different view of the subject, naturally met that mistake by another ; he viewed the crocodile as a thing sometimes to worship, but always to run away from. And this continued until Mr. Waterton changed the relations between the animals. The mode of escaping from the reptile he showed to be, not by running away, but by leaping on its back, booted and spurred. The two animals had misunderstood each other. The use of the crocodile has now been cleared up—viz., to be ridden ; and the final cause of man is, that he may improve the health of the crocodile by riding him a fox-hunting before breakfast.—DE QUINCEY.

The woods decay, the woods decay and fall,
The vapours weep their burthen to the ground,
Man comes and tills the field and lies beneath,
And after many a summer dies the swan.

Me only cruel immortality
Consumes : I wither slowly in thine arms,
Here at the quiet limit of the world,
A white-hair'd shadow roaming like a dream
The ever silent spaces of the East,
Far-folded mists, and gleaming halls of morn.

TENNYSON'S *Tithonus*.

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tions.

Translate into English :

Meine Collegia besuchte ich anfangs emsig und treulich : die Philosophie wollte mich jedoch keineswegs aufklären. In der Logik kam es mir wunderbarlich vor, daß ich diejenigen Geistesoperationen, die ich von Jugend auf mit der größten Bequemlichkeit verrichtete, so aus einander zerren, vereinzeln und gleichsam zerstören sollte, um den rechten Gebrauch derselben einzusehen. Von dem Dinge, von der Welt, von Gott glaubte ich ungefähr so viel zu wissen als der Lehrer selbst, und es schien mir an mehr als einer Stelle gewaltig zu hapern. Doch ging alles noch in ziemlicher Folge bis gegen Fastnacht, wo in der Nähe des Professors Winkler auf dem Thomasplan, gerade um die Stunde, die köstlichsten Krämpfe heiß aus der Pfaune kamen, welche uns denn dergestalt verspäteten, daß unsere Hefte locker wurden, und das Ende derselben gegen das Frühjahr mit dem Schnee zugleich verschmolz und sich verlor.

Goethe.

Nathan.

Vor grauen Jahren lebt' ein Mann im Osten,
Der einen Ring von unschätzbarem Werth
Aus lieber Hand besaß. Der Stein war ein
Opal, der hundert schöne Farben spielte,
Und hatte die geheime Kraft, vor Gott
Und Menschen angenehm zu machen, wer
In dieser Suveränität ihn trug. Was Wunder,
Daß ihn der Mann im Osten darum nie
Vom Finger ließ, und die Verfügung traf,
Auf ewig ihn bei seinem Hause zu
Erhalten? Nämlich so. Er ließ den Ring
Von seinen Söhnen dem Geliebtesten ;
Und setzte fest, daß dieser wiederum
Den Ring von seinen Söhnen dem vermache,
Der ihn der Liebste sei ; und stets der Liebste,
Ohn' Ansahn der Geburt, in Kraft allein
Des Rings, das Haupt, der Fürst des Hauses werde.
Versteh mich, Sultan.

Lessing.

1. Give, in German, a short summary of Schiller's *Geisterseher*.
2. What are the merits of Herder as a literary man ?
3. What influence had Goethe's *West-östlicher Divan* on German poetry ?
4. Name some foreigners who have distinguished themselves in German literature.
5. Point out the defects of Jean Paul's style, and mention his most important works.

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tions.

ZOOLOGY.—*Examiner, Dr. Wyville Thomson.*

1. What are the essential conditions of an organ of respiration? Give an outline of the leading modifications of the respiratory organs (1) in the invertebrata and (2) in the vertebrata, commencing in each case with the most simple form.
2. Give an account of the phenomenon which has been called "parthenogenesis," and give some examples, particularly those which had been described by Von Siebold.
3. Give the peculiarities of structure, the geographical distribution, and the palæontological history of the ganoid fishes.
4. Give some of the arguments for and against "spontaneous" or "equivocal" generation. Describe M. Pasteur's experiments.
5. Describe generally the structure of the skull in a bony fish (*e.g.* in the cod), and contrast it with that of the skull in an amphibian.
6. Give a sketch of Mr. Huxley's view as to the mode of development of the temporal bone.
7. Give some of the chief arguments for and against the doctrine of the immutability of species.

BOTANY.

1. Describe in detail the changes which the ovule and embryo undergo in conversion into the seed, in the pea and in wheat respectively.
2. Give an accepted classification of fruits, and sketch the structure of the more marked forms.
3. Give the characters of the malvaceæ, the hypericaceæ, the resedaceæ, and the rubiaceæ. Name some of the more important genera in these orders; describe them generally, and state their properties.
4. Give the characters of the flora of the coal-period. Describe the structure of some of the more remarkable forms, and state the recent orders to which they are severally most nearly allied.
5. Describe the structure of the flower and fruit in (1) *caltha*, (2) *hippuris* (3) *cerastium*, (4) *fragaria*, (5) *rumex*, (6) *avena*, (7) *carex*, and (8) *orchis*.
6. Give the general geographical distribution of the following genera and species,—"*coco-de-mer*," *disa grandiflora*, *rhododendron*, *epacris*, *magnolia*, *artocarpus*, *pandanus*, and *phoenix*.
7. Give a sketch of Schouw's Phyto-geographic Regions.

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Give a full account of the unitary or Gerhardt's system, stating the exceptions to it, and illustrating your statements by examples.
2. Describe the process of dialysis and its more important applications.
3. Give a description of the methods of Gay Lussac and Dumas for determining the density of vapours, and of the methods of calculating the direct results of experiment.
4. How would you analyse a mineral, such as a Wavellite, which is essentially a phosphate of alumina?
5. Describe the preparation and chief properties of ethylamine, triethylamine, and tetra-ethylammonium.
6. Give some account of the compounds of the alcohol radicals with the metals.
7. Explain what is meant by a triatomic alcohol, and show the relation in composition between propyl alcohol, propylene glycol, and glycerine.

LAW SCHOLARSHIPS.—FIRST YEAR STUDENTS.

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tions.

ENGLISH LAW.—*Examiner, Professor Molyneux.*

REAL PROPERTY AND CONVEYANCING.

1. Tenant in fee simple dies, leaving his only kindred, the granddaughter of a deceased paternal uncle, and a younger brother of that uncle him surviving;—who will succeed to the estate? and by what canons of descent is the heir to be ascertained?

2. What are the forms of conveyance appropriate to joint tenants and tenants in common *respectively*, where the object is to vest their respective interests in their co-tenants?

3. What is the limit within which real estate can be legally rendered inalienable? And state how that rule against perpetuities is exemplified in the instance of entailed estates.

4. What new rule of construction as to the devise to the heir of the testator has been introduced by the Inheritance Act of William IV., and what effect has such enactment in tracing the descent of real property?

5. What is the meaning of the expressions, "General Occupant" and "Special Occupant" respectively, in relation to estates "*pur autre vie*," at common law? And what modification of the former has been effected by statute?

6. Limitation to A for life, remainder to the eldest son of B in fee. B dies, leaving his wife *en ventre* of a son who is born after the death of A. Would that son have succeeded to the estate *at common law*? And if not, why not? And what is the law upon the point at present?

7. How far was a gift to a man and the heirs of his body a restraint upon alienation before the statute *de donis*?

8. State some one of the instances in which the husband is not entitled to an estate *by the curtesy*, although the wife died seized of an estate of inheritance in possession, and the husband has had issue born of her.

9. Under what different aspects is a mortgage of land viewed by Courts of Law and Courts of Equity respectively?

10. Whether is the real or personal estate of a deceased mortgagor now the primary fund for the payment of the mortgage money? What change has the law undergone in that particular?

11. What different rule exists as to the construction of deeds and wills respectively as to the language necessary to create estates of inheritance?

12. Upon what technical reasons are conveyances by lease and release held to dispense with livery of seisin? What more simple form of conveyance has now been sanctioned by statute so as to have a like operation?

13. What estate in land is created by a direct gift "to the heirs of A," and in whom does such vest? And how is the construction of those words varied where there has been a previous life estate to A himself?

14. How has the doctrine of lapsed devises been modified by the Wills Act, 1st Vic.?

15. What are the present, and what the future or contingent rights of a husband in the heritable estate of his wife, held by her as joint tenant with another person.

16. In what single instance may the wife, surviving her husband, claim her term against his disposition of it, the term not having been limited to her separate use.

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JURISPRUDENCE.—*Examiner, Professor Leslie.*

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tions.

1. What is, in Lord Bacon's view, the connexion or relation between public and private law?
2. Explain, in relation to rules of law, the maxims—(a) "*Exceptio probat regulam*;"* (b) "*Inclusio unius est exclusio alterius*."†
3. Explain the meaning and ground of the maxim—"Consequentia non est consequentia."
4. By what process ought a new digest of an overgrown body of laws to be accomplished, according to Lord Bacon?
5. How did the feudal system disturb the natural progress of industry and wealth, according to Adam Smith?
6. How did the feudal system obstruct the natural growth of towns, and restrict urban industry to some privileged situations?
7. Give some account of the law of landed property, as regards its proprietorship, tenure, and inheritance or descent, at the Conquest.
8. Give some account of the changes which took place in the law of landed property, in the above respects, in the two countries, succeeding the Conquest.
9. Define positive law, and distinguish it from law in other senses.
10. What are the essential ideas comprehended in the term positive law?
11. Define International Law, and state your reasons for regarding it as positive law or not.
12. Define General Jurisprudence, in Mr. Austin's sense.
13. What is meant by Constitutional Law?
14. How does Mr. Austin define civil liberty?

SECOND YEAR STUDENTS.

EQUITY.—*Examiner, Professor Molynaux.*

1. What is the nature and object of the Registry Acts of Anne (Irish). How does the equitable doctrine of *notice* affect their operation?
2. In what respect do the English and Irish Acts of William IV. (which substitute simple forms of assurance for recoveries) differ as affecting the rights of the Crown? And how is the investigation of title in Ireland affected by that difference?
3. What is the nature of estates founded on leases for lives, with covenants for perpetual renewal? What are the general provisions of the "Leasehold Conversion Act" (Irish) in relation to that tenure? What are the reasons of expediency upon which it has been founded? What are the special means supplied in its provisions to meet the difficulties arising from the number of persons interested, as well in the reversions as the leases to be converted? Why was not the measure extended to England?
4. What is the machinery by which ecclesiastical leases in Ireland are converted, and how are the respective rights of the lessors and lessees adjusted?
5. What is the cause of difficulty in giving an exact definition of Equity as administered by British courts?
6. What are the two grounds upon which it is alleged that suitors have a right to resort to Courts of Equity?

* i.e. The exception confirms or proves the rule.

† i.e. The enumeration of certain cases excludes other cases.

7. What is the limited sense in which the maxim "*Equitas sequitur legem*" is to be understood, as recognised by our Courts of Equity? Appendix,
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8. Give an instance illustrative of the doctrine that Equity looks upon that as done which ought to be done. Scholarship
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tions.

9. Give some instances of the application of the doctrine that "Equality is equity," and how far it is limited by the subjects of jurisdiction of courts of law.

10. State some instances in which the courts of common law administer equitable doctrine in apparent contravention of contracts.

11. In what instances are the provisions of the "*Statute of Frauds*," in relation to contracts with respect to lands, apparently contravened by Courts of Equity?

12. What are the conditions essential to give validity to a "*donatio mortis causâ*."

13. State some instances of resulting trusts.

14. What is the essential distinction between a *power* and a *trust* in exercise of equitable jurisdiction?

15. Give some instances of Implied Trusts.

16. What is the equitable doctrine with respect to remuneration of trustees?

17. In what instance alone can a solicitor accept a security from his client?

THIRD YEAR STUDENTS.

EQUITY.

1. How do Courts of Equity view a contract for the sale of goods and a contract for the sale of land respectively in relation to the exercise of equitable jurisdiction?

2. Covenant by deed of A to pay the debt of B previously incurred. Parol agreement in writing by D to pay the debt of E after it had been incurred. How far have the respective creditors remedies by action against A and D respectively?

3. A indebted to B in £100, B indebted to C in £100. B assigns to C the debt due to him by A. Can C sue A at law upon that debt? and if not, why not? What additional fact would give him that right? Without that additional fact, would C have any remedy against A in equity? and if so, what parties would be necessary to the suit?

4. In what respect do actions at law and suits in Equity by creditors against personal representatives of debtors differ in their structure and in the redress afforded? And in the event of deficient assets, what advantages and disadvantages are incidental to creditors in the choice of such remedies respectively?

5. Goods ordered verbally through a traveller to be manufactured; when ready, they are shipped, and the vessel is lost. At whose risk are the goods?

6. Under what circumstances may goods purchased through a commercial traveller and delivered be rejected by the vendee?

7. What conditions are implied in every charter-party on the part of the owners?

8. What modification of the Statute of Frauds has been effected by a modern act in relation to guarantees?

9. What are the acts essential to the validity of a deed executed in reference to a subject matter not falling within the provisions of the Statute of Frauds?

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tions.

10. What particular case forms the only exception to the principle that a mere moral consideration is not sufficient to sustain a promise?
11. To what extent is a gratuitous bailee answerable for loss?
12. Conveyance of property to trustees for payment of creditors named in the deed. In what way may the latter be deprived of the right of suit in relation to the property before they assent to the deed.
13. Goods sold by a factor; what difference as to the right of suit against the vendee depends upon the disclosure or non-disclosure of the principal?
14. How is a tenancy from year to year terminated by landlords and tenants respectively?
15. What circumstance is necessary to prevent the Statute of Limitations running against a debt?
16. In what case is protest by notary a necessary element in an action upon a bill of exchange?

JURISPRUDENCE AND CIVIL LAW.—*Examiner, Professor Leslie.*

1. State briefly the substance of Bentham's arguments in support of the following propositions:—(a) Antiquity is no reason (for a law). (b) An arbitrary definition is no reason. (c) Metaphors are not reasons. (d) A fiction is no reason.
2. In the definition of rights and obligations the legislature should have in view four ends, according to Bentham. What are they, and what is their relation to one another?
3. Why, according to Bentham, is the existence of malice a proper matter of inquiry as regards the criminality of an offence?
4. What is the ground of the distinction between the law of persons and the law of things, and is it a necessary or only a convenient distinction?
5. Does the foregoing distinction actually appear as primitive law or not, and why?
6. How does Austin regard the distinction between public and private law?
7. Criticise the error of Sir M. Hale and Judge Blackstone respecting the classification meant by *jus personarum et rerum*.
8. State, with dates, the description by Gibbon of the three periods of Roman Jurisprudence, from the Twelve Tables to the reign of Justinian.
9. Describe, with dates, the contents of the Code, Institutes, and Pandeets.
10. Explain the opposition to Roman Law in England for some centuries after the Conquest, and show how it affected the English legal system.
11. Explain the connexion between the forms of trial by ordeal, compurgation, and combat, on the one hand, and the illiterateness of early society on the other.
12. There are two different kinds of codification at different stages of legal progress. Illustrate your answer from both Roman and English Law.
13. Illustrate, from the history of both Roman and English Law, Mr. Maine's proposition that law is reformed by three successive agencies.
14. State and criticise Blackstone's theory of the origin of private property, adding and explaining Savigny's account.